Electronic Supplementary Material (ESI) for Natural Product Reports.

Marine natural products (2015) C6NP00124F

Supplementary Information

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1 Introduction

In the main Review document, only the structures of a selection of highlighted compounds are shown. However, *all* structures are available for viewing, along with names, taxonomic origins, locations, biological activities and other information in this Supplementary Information (SI) document. Each page of the SI document contains at least one array of numbered structures. The numbers are those assigned in the Review document. For structures that have their absolute configurations fully described, the compound number in the diagrams is preceded with †. Below each structural array the relevant information for each reference and associated compounds is listed. The first line contains the **Main article reference** #, followed by **Taxonomy**, **Location** and **Article title**. Each section is separated by the // symbol. The following indented line(s) provide information about each compound referred to in the Review for that publication. This information is provided in the following order, again separated by // (* is inserted where there are no data): **Compound number**, **Status** (**N** for a new compound; **M** for new to marine; **R** for a revision (structure, stereochemistry, stereochemical assignment etc)), **Compound name**, **Biological activity**, **Other information** and **Secondary reference** (giving a link to the original report for compounds with **M** or **R** status). To assist your viewing these headings are noted in the footer at the bottom of each page. To conserve space the **Title** and **Location** data may have been abbreviated, and are not as complete as in the source, MarinLit. Most **Main article reference** and **Secondary reference** numbers are hyperlinked to the relevant DOI or URL. Where those are not available, the full reference is given in a brief Bibliography at the end of this SI document. **Compound numbers** are hyperlinked to a Chemspider entry where available.

1.1 Abbreviations

In the **Biological activity** section the following abbreviations have been used:

Abs. config.	Absolute configuration	MO	microorganism
AchE	acetylcholine esterease	*M. tuberculosis*	*Mycobacterium tuberculosis*
AF	antifungal	MDR	multidrug resistant
AM	antimicrobial	MOA	mechanism of action
AB	antibacterial	mod.	moderate
AV	antiviral	MRSA	Methicillin Resistant *Staphlococcus aureus*
B. amphitrite	*Balanus amphitrite*	*P. notatum*	*Penicillium notatum*
B. cereus	*Bacillus cereus*	*P. falciparum*	*Plasmodium falciparum*
B. subtilis	*Bacillus subtilis*	PTP1B	Protein-Tyrosine Phosphatase 1B
C. albicans	*Candida albicans*	*P. aeruginosa*	*Pseudomonas aeruginosa*
cytotox.	cytotoxicity/cytotoxic	SAR	Structure Activity Relationship(s)
DPPH	2,2-diphenyl-1-picrylhydrazyl.	*S. aureus*	*Staphlococcus aureus*
E. coli	*Escherichia coli*	stereochem.	Stereochemistry
HTCL	Human Tumour Cell Line	TRP	Transient Receptor Potential
inhib.	inhibitor/inhibition	*T. mentagrophytes*	*Trichophyton mentagrophytes*
MIC	mimimum inhibitory concentration	*T. brucei*	*Trypanosoma brucei*

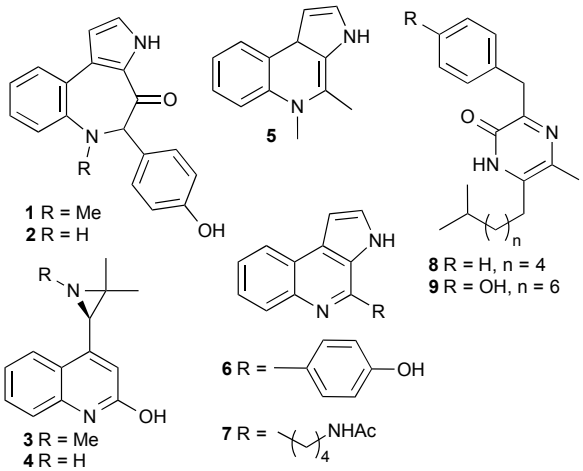
2 Additional reviews

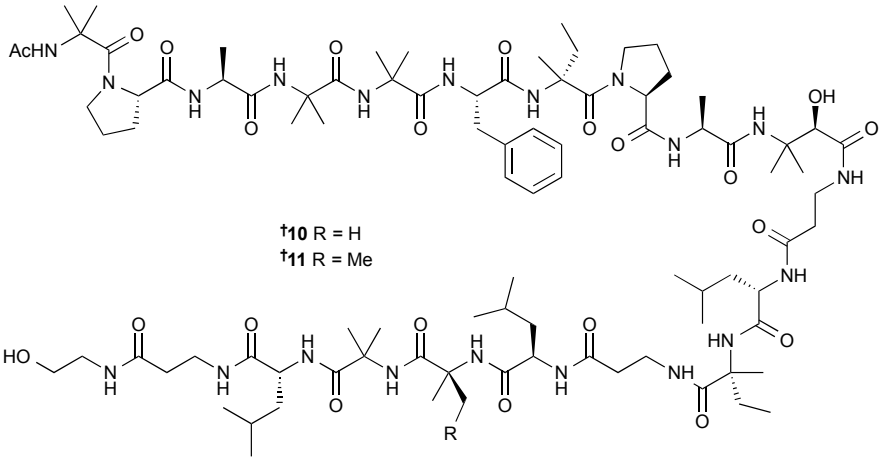
This listing is of reviews not included in the Review highlights section of the MNP review. Their placement here does not necessarily imply a lesser importance of the work described, but more likely that they may be of interest to only a smaller group of readers or have a more limited scope of coverage. MNPs with anticancer properties have been reviewed in papers on compounds reported in 2012,[s1] compounds from red algae 2003–2012,[s2] antileukemic compounds from cyanobacteria,[s3] compounds from cyanobacterium *Lyngbya* sp.,[s4] breast cancer resistance protein inhibitors,[s5] regulation of apoptosis induced by tumour necrosis factor-related apoptosis-inducing ligand (TRAIL),[s6] purine, tyrosine and tryptophan derived alkaloids,[s7] sea cucumber metabolites,[s8,s9] lamellarins,[s10] phloroglucinol, fucoxanthin and fucoidan from brown algae,[s11] fucoxanthin and fucoxanthinol,[s12] astaxanthin,[s13] sesterterpenoids,[s14] phomoxanthone A,[s15] eribulin,[s16] ecteinascidins,[s17,s18] and cell death inducing microbial protein phosphatase inhibitors.[s19] MNPs with antimicrobial properties have been described

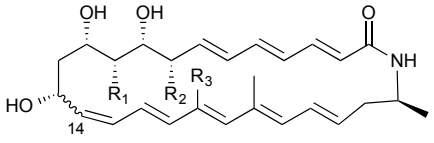
in papers on compounds from marine organisms,[s20] antibacterials from brown algae,[s21] bioactives from endophytic fungi from the Brazilian *Bostrychia tenella*,[s22] echinoderm host defense peptides,[s23] and anti-infectives from cyanobacteria.[s24] Other types of bioactivities have been reviewed in papers on antivirals from seaweeds[s25] and marine snails and slugs,[s26] the carotenoid fucoxanthin with potential for diabetes and anti-obesity therapy,[s27,s28] the potential neuroprotective agent astaxanthin,[s29] MNPs that interfere with multiple cytoskeletal protein interactions,[s30] signal transducers and activators of transcription regulatory networks,[s31] novel cardiovascular protective agents targeting the endothelin system,[s32] chemotherapeutics for acute myeloid leukemia,[s33] antioxidant peptides,[s34] hypotensive, hypoglycaemic and hypolipidaemic effects of bioactive compounds from micro-organisms,[s35] diterpenoids as potential anti-inflammatory agents,[s36] manzamine alkaloids as antileishmanial agents,[s37] and anti-oxidant carotenoids with potential for anti-inflammatory therapy.[s38] Organism-focussed reviews include papers on coral-derived micro-organisms,[s39] marine actinomycetes,[s40] mangrove actinobacteria,[s41] mangrove-associated microbes,[s42] deep-sea fungi,[s43] endophytes from marine macroalgae,[s44] low molecular weight metabolites from diatoms,[s45] traditional medical uses of Muricidae molluscs[s46] and biosynthetic diversity and comparative genomics of cyanobacteria.[s47] Reviews of classes of compounds or specifically named MNPs include papers on cyclic imine toxins,[s48] cyclopeptides,[s49] cyanobactins from cyanobacteria,[s50] cnidarian neuropeptides,[s51] apratoxins,[s52] pyridinoacridine alkaloids,[s53] sponge derived bromotyrosines,[s54] bioactive coumarins,[s55] sea cucumber triterpene glycosides,[s56,s57] bioactive terpenes from fungi,[s58] terpenes from Red Sea invertebrates,[s59] C_{15} acetogenins from *Laurencia* spp.,[s60] recent organohalogen compounds,[s61] microalgal phytosterols,[s62] photosynthetic pigments in diatoms,[s63] carotenoids from microalgae[s64] and Haloarchaea,[s65] conotoxins,[s66,s67] palytoxin,[s68] tetrodotoxin,[s69,s70] the cyanobacterial sunscreen scytonemin,[s71,s72] fucoxanthin[s73] and dimethylsulfoniopropionate.[s74] Ecology-focussed topics are included in reviews on ascidians and their symbiotic bacteria,[s75] Antarctic benthic communities,[s76] oyster antimicrobial defense,[s77] defensive symbioses of animals with prokaryotic and eukaryotic micro-organisms,[s78] “green tide” seaweed blooms[s79] and MNPs in marine biological invasions.[s80] A number of papers which, while not all are reviews, are useful to reference here as they describe advances in techniques or approaches to discovery that are relevant to MNP studies. These include papers on alternative and efficient extraction methods,[s81] countercurrent separation[s82] and *Marine metagenomics as a source for bioprospecting*.[s84]

3 Marine microorganisms and phytoplankton:

3.1 Marine-sourced bacteria



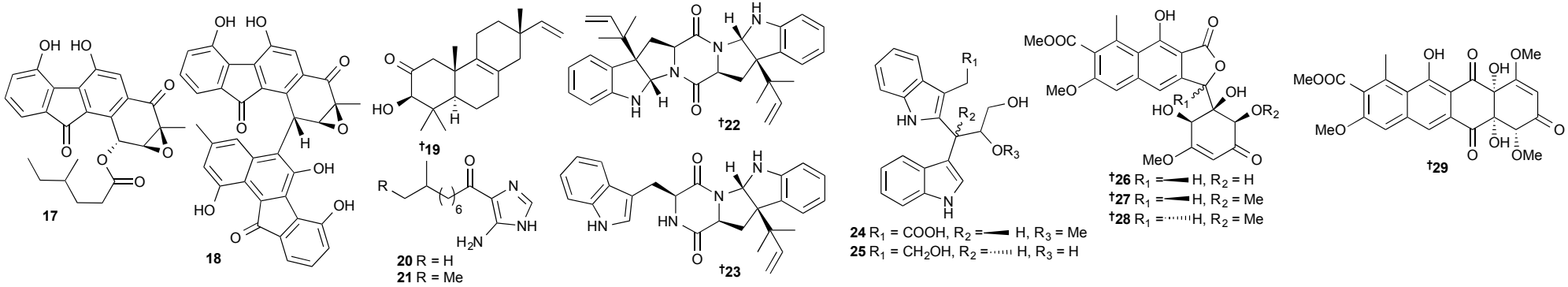




26 Bacteroidetes *Mooreia alkaloidigena*, Bacteroidetes *Catalinimonas alkaloidigena* // various locations // Previously uncultured marine bacteria linked to novel alkaloid production
- ***1*** // N // marinoazepinone A // no AB activity // first np egs of azapinon-3-one moiety // *
- ***2*** // N // marinoazepinone B // AB activity against *Pontibacillus* sp. // first np egs of azapinon-3-one moiety // *
- ***3*** // N // marinoaziridine A // no AB activity // first aziridines from Gram-negative bacterium // *
- ***4*** // N // marinoaziridine B // no AB activity // first aziridines from Gram-negative bacterium // *
- ***5*** // N // marinoquinoline G // no AB activity // * // *
- ***6*** // N // marinoquinoline H // no AB activity // * // *
- ***7*** // N // marinoquinoline I // AB activity against *Pontibacillus* sp. // * // *
- ***8*** // N // marinopyrazinone A // no AB activity // first pyrazinone nps from Gram-negative bacteria // *
- ***9*** // N // marinopyrazinone B // AB activity against *Pontibacillus* sp. and *Vibrio shilo*i // first pyrazinone nps from Gram-negative bacteria // *

27 Actinobacteria *Microbacterium sediminis* // Indian Ocean // Microbacterins A and B, new peptaibols from the deep sea actinomycete *Microbacterium sediminis* sp. nov. YLB-01(T)
- **10** // N // microbacterin A // sig. activity against HTCL // Marfeys, CD and optical rotation for abs. config. // *
- **11** // N // microbacterin B // sig. activity against HTCL // Marfeys, CD and optical rotation for abs. config. // *

28 Actinobacteria *Micromonospora* sp. // Point Lobos, Monterey Bay, USA // Genome-directed lead discovery: biosynthesis, structure elucidation, and biological evaluation of two families of polyene macrolactams against *Trypanosoma brucei*
- ***12*** // N // lobosamide A // sig. active against *T. brucei* // abs. config. by spect. analysis, chem. mod., bioinformatics // *
- ***13*** // N // lobosamide B // sig. active against *T. brucei* // abs. config. by spect. analysis, chem. mod., bioinformatics // *
- ***14*** // N // lobosamide C // not active against *T. brucei* // abs. config. by spect. analysis, chem. mod., bioinformatics // *
- ***15*** // N // mirilactam A // not active against *T. brucei* // abs. config. by spect. analysis, chem. mod., bioinformatics. not a MNP // *
- ***16*** // N // mirilactam B // not active against *T. brucei* // abs. config. by spect. analysis, chem. mod., bioinformatics. not a MNP // *



31 Actinobacteria *Micromonosporaa rosaria* // * // Heterologous expression of fluostatin gene cluster leads to a bioactive heterodimer
17 // N // fluostatin L // no AB activity // * // *
18 // N // difluostatin A // AB activity against *K. pneumonia, A. hydrophila, S. aureus* // * // *

32 Actinobacteria *Micromonospora* sp. // Cát Bà Peninsula, Vietnam // A pimarane diterpene and cytotoxic angucyclines from a marine-derived *Micromonospora* sp. in Vietnam's East Sea
19 // N // isopimara-2-one-3-ol-8,15-diene // not active // abs. config. based on ORD // *

34 Actinobacteria *Nocardiopsis* sp. // S. California // Nocarimidazoles A and B from a marine-derived actinomycete of the genus *Nocardiopsis*
20 // N // nocarimidazole A // weak bioactivity // a 4-aminoimadazole with conjugated carbonyl side chain is rare // *
21 // N // nocarimidazole B // weak bioactivity // a 4-aminoimadazole with conjugated carbonyl side chain is rare // *

37 Actinobacteria *Nocardiopsis* sp. // Iriomote Is., Okinawa, Japan // Diketopiperazines, inhibitors of sterol *O*-acyltransferase, produced by a marine-derived *Nocardiopsis* sp. KM2-16
22 // M // amauromine // selective inhib. of sterol *O*-acyltransferase-2 // * // **s85**
23 // M // * // not a selective inhib. of sterol *O*-acyltransferase-2 // * // **s86**

38 Actinobacteria *Rubrobacter radiotolerans* // * // Acetylcholinesterase inhibitory dimeric indole derivatives from the marine actinomycetes *Rubrobacter radiotolerans*
24 // N // * // inhib. AchE activity IC_{50} 11.8 μM. not cytotox. against 4 HTCL // CD established abs. config. at C8' // *
25 // N // * // inhib. AchE activity IC_{50} 13.5 μM. not cytotox. against 4 HTCL // CD established abs. config. at C8' // *

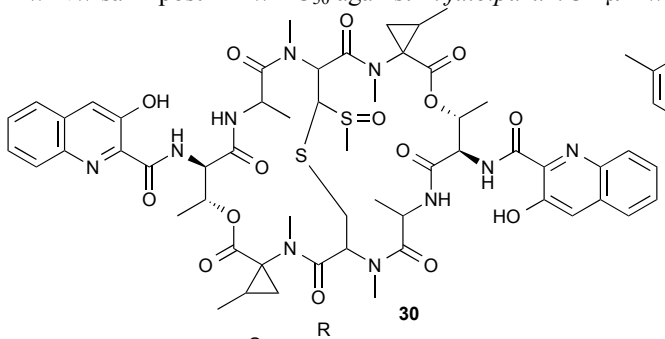
39 Actinobacteria *Saccharothrix* sp. // Heishijiao Bay, Dalian, China // Saccharothrixones A–D, tetracenomycin-type polyketides from the marine-derived actinomycete *Saccharothrix* sp.
26 // N // saccharothrixone A // not cytotox. // X-ray and DFT ECD calculations // *
27 // N // saccharothrixone B // not cytotox. // DFT ECD calculations // *
28 // N // saccharothrixone C // not cytotox. // DFT ECD calculations // *
29 // N // saccharothrixone D // mod. cyt. against HepG2, inactive MCF-7 & K562 // X-ray and DFT ECD calculations // *

40 Actinobacteria *Salinispora arenicola* // * // Molecular networking and pattern-based genome mining improves discovery of biosynthetic gene clusters and their products from *Salinispora*
30 // N // retimycin A // no testing reported // added to *Salinospora* MS/MS spectral library. // *

41 Actinobacteria *Salinispora* sp. // * // Sioxanthin, a novel glycosylated carotenoid, reveals an unusual subclustered biosynthetic pathway
31 // N // sioxanthin // no testing reported // CD analysis confirmed the 2'-OH as *S* // *

43 Actinobacteria *Salinispora* sp. // Keawekaheka Bay, Hawaii // Salinipostins A–K, long-chain bicyclic phosphotriesters as a potent and selective antimalarial chemotype
32 // N // salinipostin A // EC_{50} against *P. falciparum* 0.05μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
33 // N // salinipostin B // EC_{50} against *P. falciparum* 0.139μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
34 // N // salinipostin C // EC_{50} against *P. falciparum* 0.415μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
35 // N // salinipostin D // EC_{50} against *P. falciparum* 0.082μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
36 // N // salinipostin E // EC_{50} against *P. falciparum* 3.22μM // comparison of exptl. VCD against DFT calc. VCD spectra // *

37 // N // salinipostin F // EC_{50} against *P. falciparum* 0.266 μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
38 // N // salinipostin G // EC_{50} against *P. falciparum* 1.52 μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
39 // N // salinipostin H // EC_{50} against *P. falciparum* 8.70 μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
40 // N // salinipostin I // EC_{50} against *P. falciparum* 1.26 μM // comparison of exptl. VCD against DFT calc. VCD spectra // *
41 // N // salinipostin J // EC_{50} against *P. falciparum* 49.6μ M // comparison of exptl. VCD against DFT calc. VCD spectra // *
42 // N // salinipostin K // EC_{50} against *P. falciparum* 32 μM // comparison of exptl. VCD against DFT calc. VCD spectra // *



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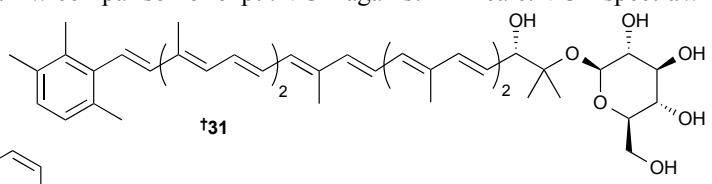
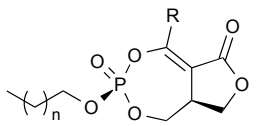
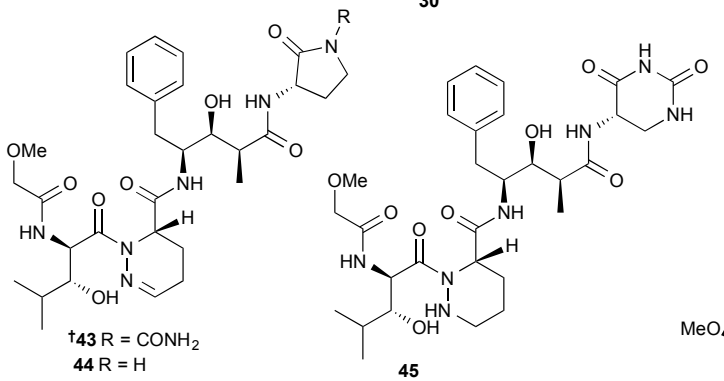


†**31**

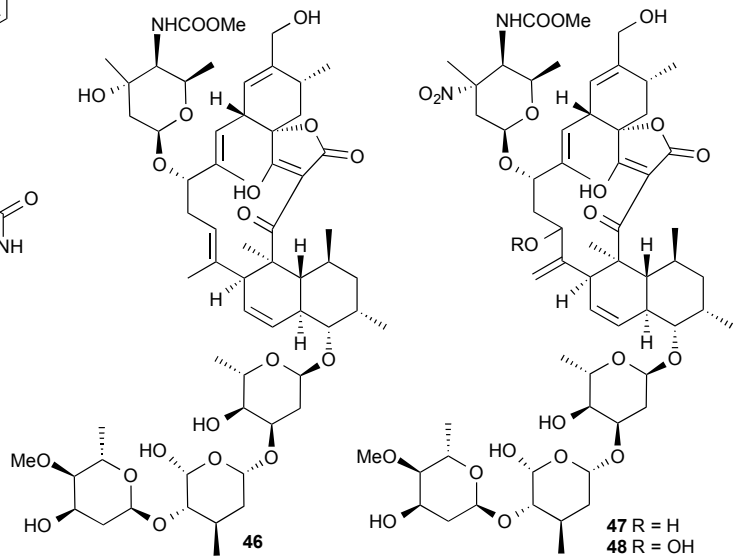


†**32** n = 13, R = *n*Bu
†**33** n = 12, R = *n*Bu
†**34** n = 11, R = *n*Bu
†**35** n = 12, R = *i*Bu
†**36** n = 11, R = *i*Bu
†**37** n = 13, R = *n*Pr
†**38** n = 12, R = *n*Pr
†**39** n = 11, R = *n*Pr
†**40** n = 13, R = Et
†**41** n = 12, R = Et
†**42** n = 11, R = Et



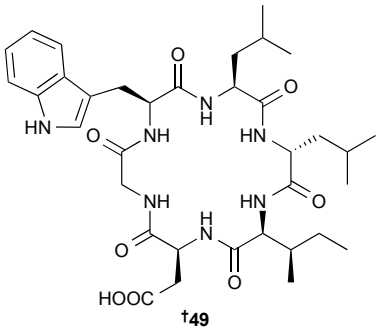
†**43** R = $CONH_2$
44 R = H

45



46

47 R = H
48 R = OH

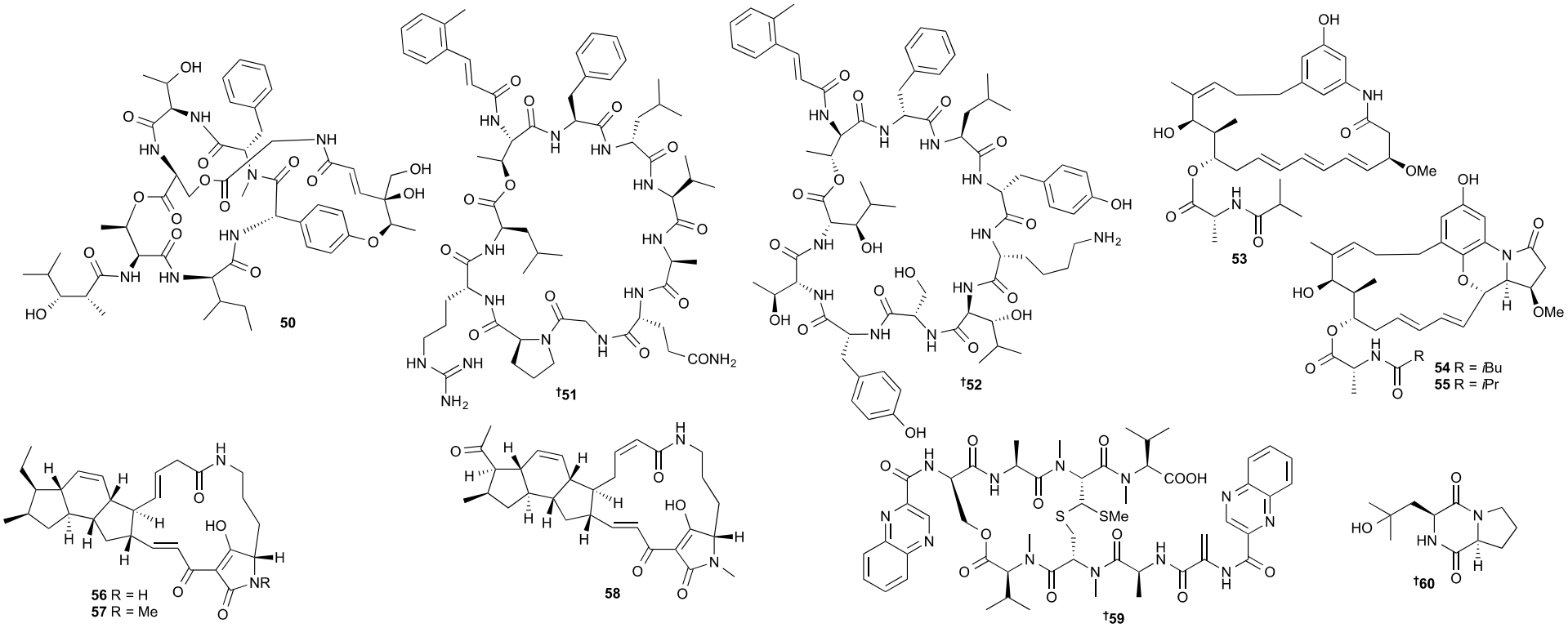


†**49**

46 Actinobacteria *Streptomyces ballenaensis*, Actinobacteria *Streptomyces bangulaensis* // Bangula Bay, New Britain Is., Papua New Guinea // Actinoramide A identified as a potent antimalarial from titration-based screening of marine natural product extracts
43 // N // actinoramide D // 6-20x less active against 5 parasite strains than actinoramide A // on hydrogenation gives actinoramide A. abs. config. implied // *
44 // N // actinoramide E // ~2x less active against 5 parasite strains than actinoramide D // * // *
45 // N // actinoramide F // not active // * // *

51 Actinobacteria *Streptomyces* sp. // Tempisque, Costa Rica // Novel lobophorins inhibit oral cancer cell growth and induce Atf4- and Chop-dependent cell death in murine fibroblasts
46 // N // lobophorin CR1 // potent inducers of CHOP gene expression. mod. splicers XBP1 // * // *
47 // N // lobophorin CR2 // potent inducers of CHOP gene expression. mod. splicers XBP1 // * // *
48 // N // lobophorin CR3 // potent inducers of CHOP gene expression. mod. splicers XBP1 // * // *

52 Actinobacteria *Streptomyces scopuliridis* // * // Identification of the biosynthetic gene cluster for the anti-infective desotamides and production of a new analogue in a heterologous host
49 // N // desotamide G // no notable AB activity against *S. pneumoniae, S. aureus* // abs. config. by hydrolysis and Marfeys // *



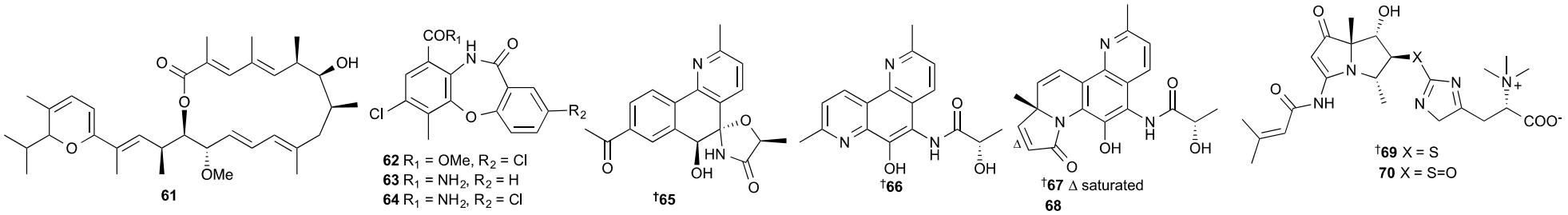
53 Actinobacteria *Streptomyces* sp. // Florida Keys, USA // Salinamide F, new depsipeptide antibiotic and inhibitor of bacterial RNA polymerase from a marine-derived *Streptomyces* sp.
50 // N // salinamide F // potent inhib, of Gram-(-ve) and (+ve) bacterial RNAP and AB activity // structure shown in reference **53** is incorrectly drawn // *

54 Actinobacteria *Streptomyces* sp. // Florida Keys, USA // Application of 3D NMR for structure determination of peptide natural products
51 // N // eudistamide A // no AB activity // useful comments on 3D-NMR expts. abs. config by syn., hydrolysis and Marfeys // *
52 // N // eudistamide B // AB activity against MRSA, *E. coli, B. subtilis*. active in murine thigh model // comments on 3D-NMR expts. abs. config by syn., hydrolysis and Marfeys // *

55 Actinobacteria *Streptomyces seoulensis* // * // New ansamycin analogues from the mutant strain of *Streptomyces seoulensis*
53 // N // * // cyt. to HepG2 & MCF-7. tested for LPS-induced IL-6 production // * // *
54 // N // * // cyt. to HepG2 & MCF-7. tested for LPS-induced IL-6 production // * // *
55 // N // * // cyt. to HepG2 & MCF-7. tested for LPS-induced IL-6 production // */ // *

57 Actinobacteria *Streptomyces zhaozhouensis* // Utonde, Equatorial Guinea // New ikarugamycin derivatives with antifungal and antibacterial properties from *Streptomyces zhaozhouensis*
56 // N // isoikarugamycin // MIC 2-8 µg/mL against MRSA, *C. albicans, A. fumigatu*s. NA against *E. coli* // * // **s87**
57 // M // 28-*N*-methylikarugamycin // MIC 1-8 µg/mL against MRSA, *C. albicans, A. fumigatu*s. NA against *E. coli* // previously reported as a synthetic deriv. of ikarugamycin // **s88**
58 // N // 30-oxo-28-*N*-methylikarugamycin // not active // * // *

59 Actinobacteria *Streptomyces* sp. // Lingshui Bay, Hainan Province, China // A new analogue of echinomycin and a new cyclic dipeptide from a marine-derived *Streptomyces* sp. LS298
59 // N // quinomycin G // mod. AB activity against 15 drug-sensitive/resistant MO and 12 HTCL // abs. config. by hydrolysis/Marfeys and NMR interpretation // *
60 // N // cyclo-(L-Pro-4-OH-L-Leu) // not tested // abs. config. by hydrolysis/Marfeys // *

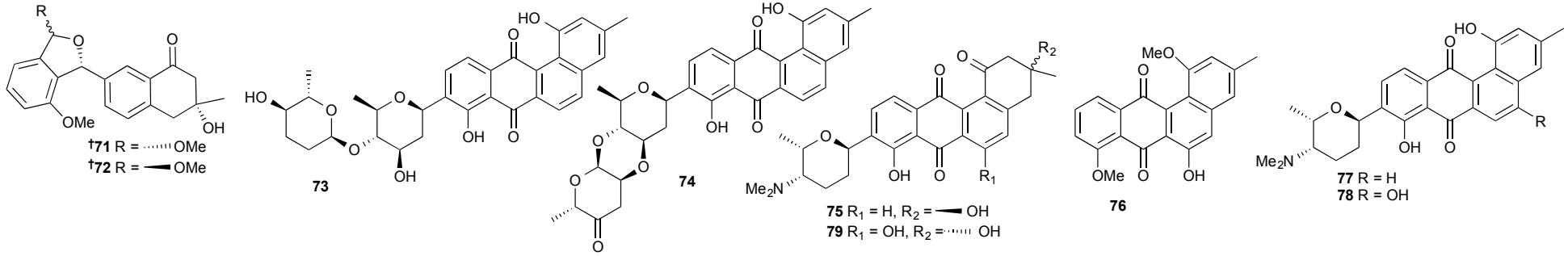


60 Actinobacteria *Streptomyces* sp. // Hijya River, Japan // Bafilomycin L, a new inhibitor of cholesteryl ester synthesis in mammalian cells, produced by marine-derived *Streptomyces* sp.
61 // N // bafilomycin L // inhibits CE syn. in CHO cells and mice macrophages.IC_{50} 0.83 and 6.1 nM. // rel. config established // *

61 Actinobacteria *Streptomyces olivaceus* // Southwest Indian Ocean // Mycemycins A–E, new dibenzoxazepinones isolated from two different Streptomycetes
62 // N // mycemycin C // no testing reported // * // *
63 // N // mycemycin D // no testing reported // * // *
64 // N // mycemycin E // no testing reported // * // *

62 Actinobacteria // S. California // Actinobenzoquinoline and actinophenanthrolines A–C, unprecedented alkaloids from a marine actinobacterium
65 // N // actinobenzoquinoline // no bioactivity against HCT-116 or *S.aureus* // abs. config. by X-ray // *
66 // N // actinophenanthroline A // no bioactivity against HCT-116 or *S.aureus* // abs. config. by X-ray. 1st NP examplse of 1,7-phenanthroline core // *
67 // N // actinophenanthroline B // no bioactivity against HCT-116 or *S.aureus* // abs. config. by X-ray. 1st NP examples of 1,7-phenanthroline core // *
68 // N // actinophenanthroline C // no bioactivity against HCT-116 or *S.aureus* // abs. config. by X-ray with **67.** 1st NP examples of 1,7-phenanthroline core // *

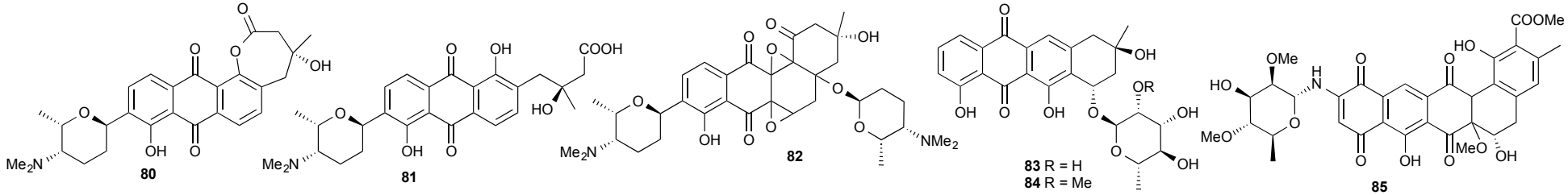
63 Actinobacteria *Streptomyces spinoverrucosus* // Bahamas // Spithioneines A and B, two new bohemamine derivatives possessing ergothioneine moiety from a marine-derived *Streptomyces spinoverrucosus*
69 // N // spithioneine A // not cytotox. to 4 HTCL or AB activity against *P. aeruginosa* and *B. subtilis* // abs. config. determined by CD and degradation. // *
70 // N // spithioneine B // not cytotox. to 4 HTCL or AB activity against *P. aeruginosa* and *B. subtilis* // abs. config. of chiral sulfoxide not determined // *



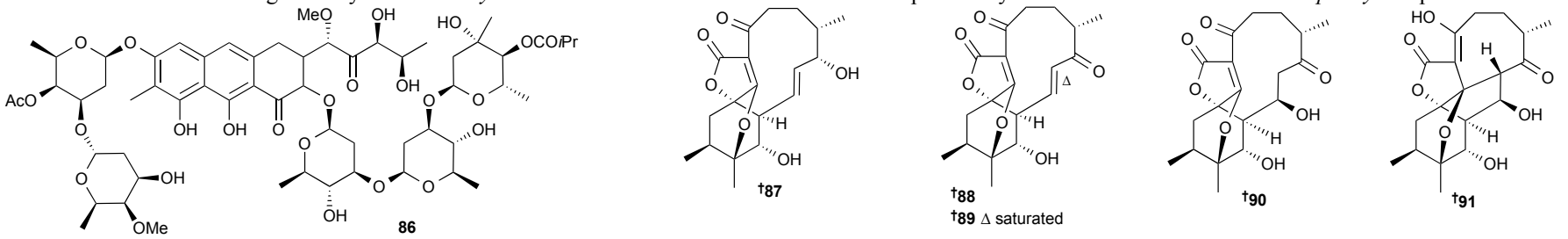
64 Actinobacteria *Streptomyces* sp. // Kiaochow Bay, Qingdao, China // Isolation, stereochemical study, and cytotoxic activity of isobenzofuran derivatives from a marine *Streptomyces* sp.
71 // N // * // no activity against A549 // abs. config. by ECD and DFT calculations // *
72 // N // * // activity against A549 down to 10^{-4} to 10^{-6} M // abs. config. by ECD and DFT calculations // *

65 Actinobacteria *Streptomyces* sp. // S. China Sea // Cytotoxic and antibacterial angucycline- and prodigiosin- analogues from the deep-sea derived *Streptomyces* sp. SCSIO 11594
73 // N // marangucycline A // no cytotox., weak AB against *E. faecalis* // 3 known compds. also identified // *
74 // N // marangucycline B // selective IC_{50} values 0.45-3.67 μM against 4 tumour cell lines. weak AB against *E. faecalis* // 3 known compds. also identified // *

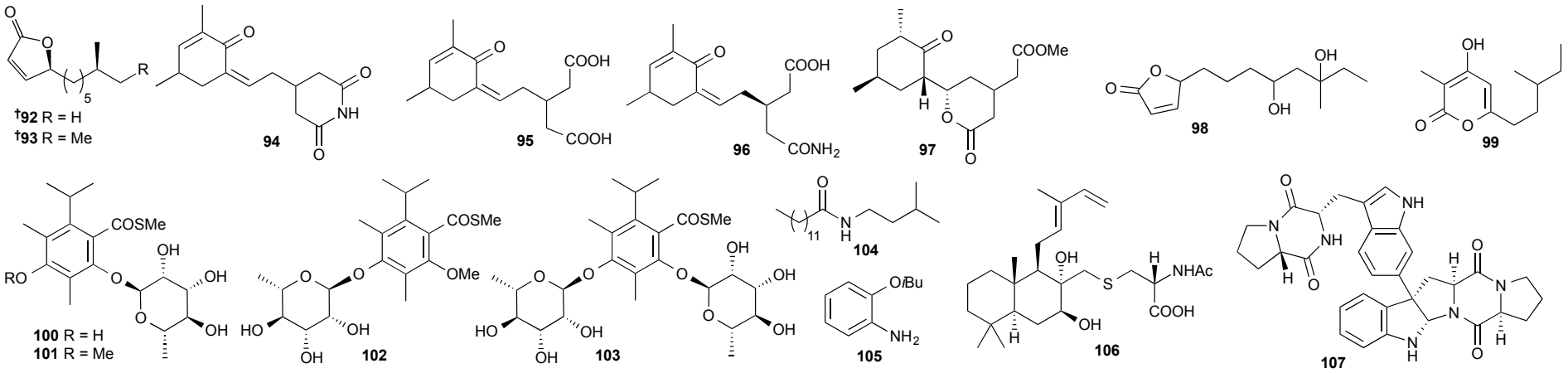
66 Actinobacteria *Streptomyces* sp. // Las Carmelitas, Mona Is., Puerto Rico // Monacyclinones, new angucyclinone metabolites isolated from *Streptomyces* sp. M7_15 associated with the Puerto Rican sponge *Scopalina ruetzleri*
75 // M // frigocyclinone // weak to no bioactivity against Gram-(+) bacteria. EC_{50} SJCRH30 5.2 μM // previously islated from a *Streptomyces griseus sp.* // **s89**
76 // M // dimethyldehydrorabelomycin // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // previously a semisynthetic derivateve from dehydrobelomycin // **s90**
77 // N // monacyclinone A // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // * // *
78 // N // monacyclinone B // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // * // *
79 // N // monacyclinone C // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // * // *
80 // N // monacyclinone D // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // * // *
81 // N // monacyclinone E // weak to no bioactivity against Gram-(+) bacteria and SJCRH30 cells // * // *
82 // N // monacyclinone F // strong bioactivity against Gram-(+) bacteria. EC_{50} SJCRH30 0.73 μM // * // *



67 Actinobacteria *Streptomyces* sp. // Sunshine Coast, Queensland, Australia // Aranciamycins I and J, antimycobacterial anthracyclines from an Australian marine-derived *Streptomyces* sp.
83 // N // aranciamycin I // MIC *M. bovis* 10, *B. subtilis* 3.7 μM. inactive *S. aureus, E. coli, P. aeruginosa, C. albicans*. Cyt. to SW620, HepG2 // biosynthetic/optical rotation links to abs. config. of aranciamycin A // *
84 // N // aranciamycin J // similar bioactivities to aranciamycin I **83**// *
68 Actinobacteria *Streptomyces* sp. // Rovinj, Croatia // Inhib. activities of the marine streptomycete-derived compound SF2446A2 against *Chlamydia trachomatis* and *Schistosoma mansoni*
85 // M // SF2446A2 // affects growth cycle of *Chlamydia trachomatis* and *Schistosoma mansoni* // previously isolated from a soil-derived *Streptomyces* sp. // **s91**



69 Actinobacteria *Streptomyces* sp. // Prudhoe Bay, Beaufort Sea // Antineoplastic agents 596. Isolation and structure of chromomycin A5 from a Beaufort Sea microorganism
86 // N // chromomycin A5 // nano to sub-nanomolar activty against a panel of HTCL, also murine. // * // *
72 Actinobacteria *Streptomyces* sp. // American Samoa // Abyssomicin 2 reactivates latent HIV-1 by a PKC- and HDAC-independent mechanism
87 // R // abyssomicin 1 // no data // abyssomysin I has been reassigned as abyssomycin 1 // **s92**
88 // R // abyssomicin 2 // reactivation of 56%; EC_{50} 13.9 μM // abs. config. reassigned. X-ray, MTPA esters // **s92**
89 // N // abyssomicin 3 // marginal activity // inferred on biosynthetic grounds from **88** // *
90 // N // abyssomicin 4 // marginal activity // inferred on biosynthetic grounds from **88** // *
91 // N // abyssomicin 5 // no data // cyclised analogue of abyssomicin 4 // *



73 Actinobacteria *Streptomyces* sp. // Toyama Bay, Japan // Two butenolides with PPARα agonistic activity from a marine-derived *Streptomyces*
92 // N // * // induced PPARa and g transcription in a conc. dependent manner at 1-10 μM // abs. config. by derivatisation and CD // *
93 // N // * // induced PPARa and g transcription in a conc. dependent manner at 1-10 μM // abs. config. by derivatisation and CD // *

74 Actinobacteria *Streptomyces* sp. // Zhangzhou, Fujian Province, China // Four new cycloheximide drivatives from *Streptomyces* sp. h-119
94 // N // * // no biological activity // * // *
95 // N // * // no biological activity // * // *
96 // N // * // no biological activity // * // *
97 // N // * // no biological activity // * // *

75 Actinobacteria // JIaozhou Bay, China // A new furanone isolated from a marine-derived actinomycete M159
98 // N // * // no biological data // * // *

76 Actinobacteria *Streptomyces* sp. // Suncheon Bay, S. Korea // Violapyrone J, α-pyrone derivative from a marine-derived actinomycetes, *Streptomyces* sp.
99 // N // violapyrone J // no biological data // * // *

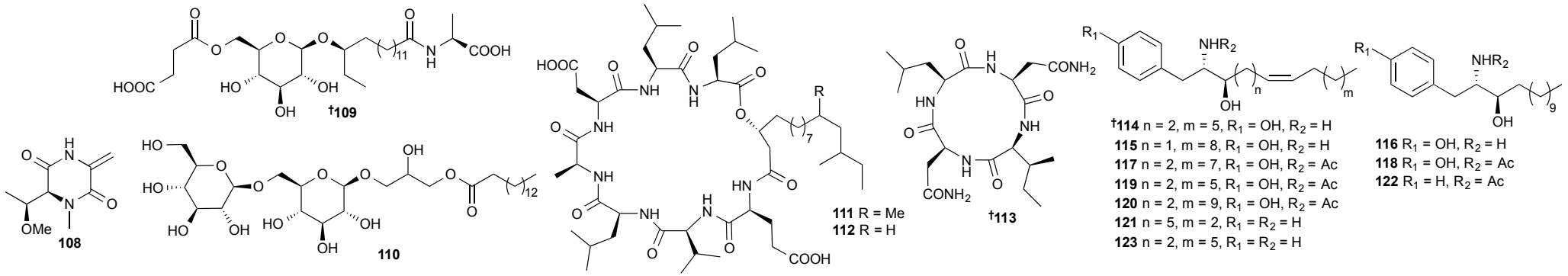
77 Actinobacteria *Streptomyces* sp. // Suncheon Bay, S. Korea // Suncheonosides A–D, benzothioate glycosides from a marine-derived *Streptomyces* sp.
100 // N // suncheonoside A // not bioactive // rel. stereochem. based on nOe data // *
101 // N // suncheonoside B // not bioactive // rel. stereochem. based on nOe data // *
102 // N // suncheonoside C // not bioactive // rel. stereochem. based on nOe data // *
103 // N // suncheonoside D // not bioactive // rel. stereochem. based on nOe data // *

78 Actinobacteria *Streptomyces* sp. // Tamil Nadu, India // Characterization and structure elucidation of antibacterial compound of *Streptomyces* sp. ECR77 isolated from East coast of India
104 // M // * // bioactive against 5 *Vibrio* sp. // 123 Actinobacterial isolates were screened // *

79 Actinobacteria *Brevibacterium* sp. // Xiamen Bay, China // Discovery of an algicidal compound from *Brevibacterium* sp. BS01 and its effect on a harmful algal bloom-causing species, *Alexandrium tamarense*
105 // N // * // algicidal properties against *Alexandrium tamarense* // * // *

80 Actinobacteria *Streptomyces* sp. // Parangipettai, India // Characterization of a potential β-lactamase inhib. metab. from a marine *Streptomyces* sp. PM49 active against MDR pathogens
106 // N // * // * // incompletely characterised //

84 Actinobacteria *Streptomyces* sp. // Yellow Sea // Diversity and bioprospecting of culturable actinomycetes from marine sediment of the Yellow Sea, China
107 // N // iso-naseseazine B // AF activity against *C. albicans* reported // three isomers isolated // *



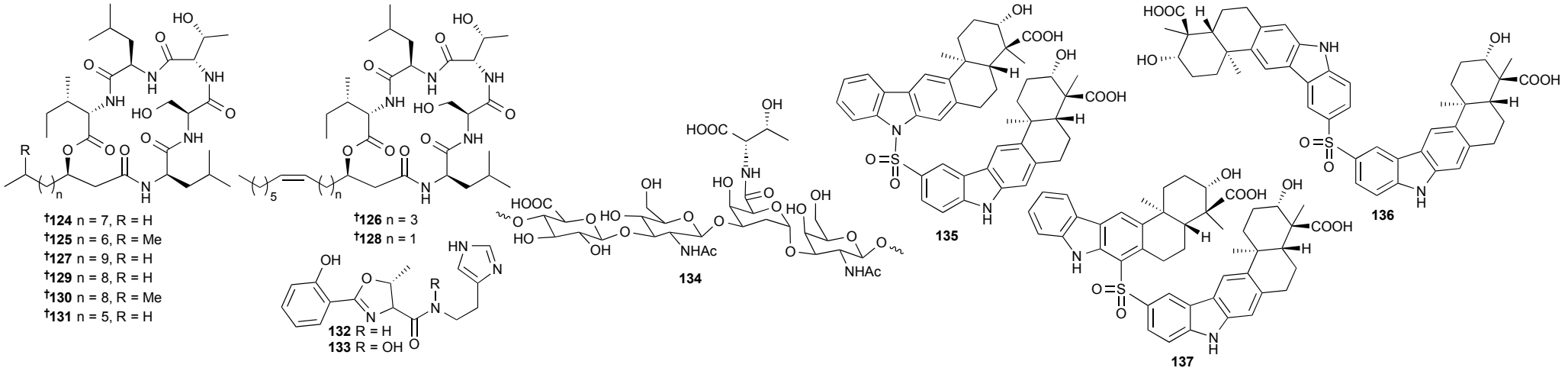
85 Actinobacteria *Streptomyces* sp. // Conch Reef, Key Largo, Florida, USA // Antiproliferative and antiplasmodial compounds from selected *Streptomyces* species
108 // N // xestostreptin // antimalarial activity. IC_{50} 50 µM // * // *

86 Firmicutes *Bacillus licheniformis* // Ieodo, South Korea // Ieodoglucomide C and ieodoglycolipid, new glycolipids from a marine-derived bacterium *Bacillus licheniformis* 09IDYM23
109 // N // ieodoglucomide C // MIC 0.01- 0.05 µM against 6 bacteria and 5 fungi // abs. config. by Marfeys and Moshers after hydrolysis // *
110 // N // ieodoglycolipid // MIC 0.01- 0.05 µM against 6 bacteria and 5 fungi // * // *

87 Firmicutes *Bacillus subtilis* // Gageocho, South Korea // Gageopeptins A and B, new inhibitors of zoospore motility of the phytopathogen *Phytophthora capsici* from a marine-derived bacterium *Bacillus* sp. 109GGC020
111 // N // gageopeptin A // inhib. of zoospore motility IC_{50} 1 µg/mL. good AF and mod. AB activity // config. of Me's in fatty acid side chain not ascertained // *
112 // N // gageopeptin B // inhib. of zoospore motility IC_{50} 400 µg/mL. good AF and mod. AB activity // config. of Me's in fatty acid side chain not ascertained // *

88 Firmicutes *Staphylococcus* sp. // Nagasaki Shitsu coast, Japan // Staphylopeptide A, a new cyclic tetrapeptide from culture broth of *Staphylococcus* sp.
113 // N // staphylopeptide A // Not bioactive against a range of 6 Gram-(-ve) & (+ve) bacteria // Ile assumed to be 2*S*,3*S* // *

90 Proteobacteria *Vibrio* sp. // Dapeng Bay, Pingtung County, Taiwan // Vitroprocines, new antibiotics against *Acinetobacter baumannii*, discovered from marine *Vibrio* sp. QWI-06 using mass-spectrometry-based metabolomics approach
114 // N // vitroprocine A // MIC *Acinetobacter baumann*i <8 µg/mL // abs. config. by Moshers // *
115 // N // vitroprocine B // MIC *Acinetobacter baumann*i <32 µg/mL // * // *
116 // N // vitroprocine C // MIC *Acinetobacter baumann*i <16 µg/mL // * // *
117 // N // vitroprocine D // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
118 // N // vitroprocine E // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
119 // N // vitroprocine F // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
120 // N // vitroprocine G // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
121 // N // vitroprocine H // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
122 // N // vitroprocine I // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *
123 // N // vitroprocine J // MIC *Acinetobacter baumann*i 32-64 µg/mL // * // *

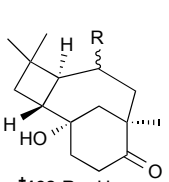


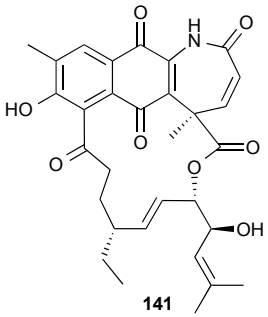
91 Proteobacteria *Photobacterium halotolerans* // * // Biosynthetic products from a nearshore-derived Gram-negative bacterium enable reassessment of the kailuin depsipeptides
124 // R // kailuin A // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s93**
125 // R // kailuin B // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s93**
126 // R // kailuin C // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s93**
127 // R // kailuin D // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s93**
128 // R // kailuin E // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s94**
129 // R // kailuin F // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // **s95**
130 // N // kailuin G // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // *
131 // N // kailuin H // minimal bioactivity against solid tumours // Moshers and extensive ^{13}C NMR // *

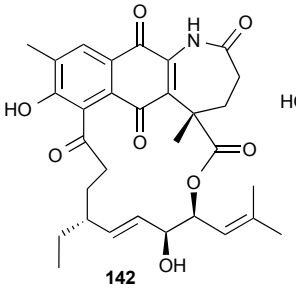
92 Proteobacteria *Pseudomonas fluorescens* // Ayvalik-Agean Sea coast, Turkey // A new siderophore from sponge associated *Pseudomonas fluorescens* 4.9.3
132 // N // * // inactive in bioassays // * // *
133 // M // pre-pseudomonine // inactive in bioassays // prepared previously // **s96**

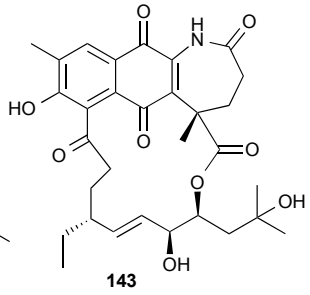
93 * // * // A unique capsular polysaccharide structure from the psychrophilic marine bacterium *Colwellia psychrerythraea* 34H that mimics antifreeze (glyco)proteins
134 // N // * // not noted // confers cryoprotection // *

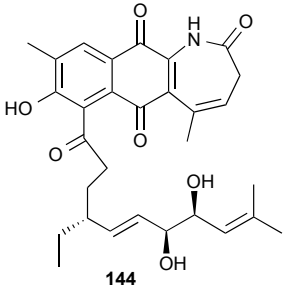
96 * // * // Bacterial synthesis of unusual sulfonamide and sulfone antibiotics by flavoenzyme-mediated sulfur dioxide capture
135 // N // sulfadixiamycin A // MIC 25 µg/mL as anti-mycobacterial. non cytotox. MIC 3-6 µg/mL against bacteria // * // *
136 // N // sulfadixiamycin B // MIC 25 µg/mL as anti-mycobacterial. non cytotox. // * // *
137 // N // sulfadixiamycin C // MIC 25 µg/mL as anti-mycobacterial. non cytotox. // * // *

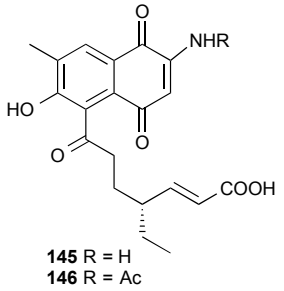


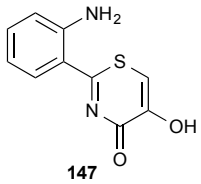


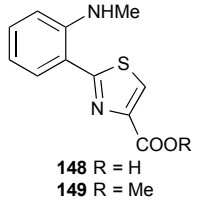


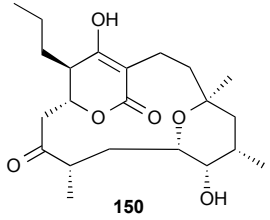


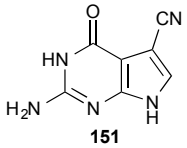


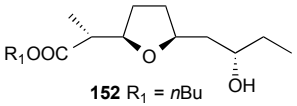


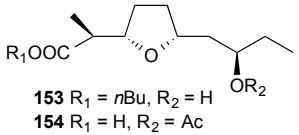












98 Actinobacteria *Streptomyces* sp. // Xiamen, Fujian Province, China // Bacaryolanes A–C, rare bacterial caryolanes from a mangrove endophyte
138 // N // bacaryolane A // not active // comment on the role of endophytes // *
139 // N // bacaryolane B // weak activity against *B. subtilis* // comment on the role of endophytes // *
140 // M // bacaryolane C // not active // comment on the role of endophytes // **s97**

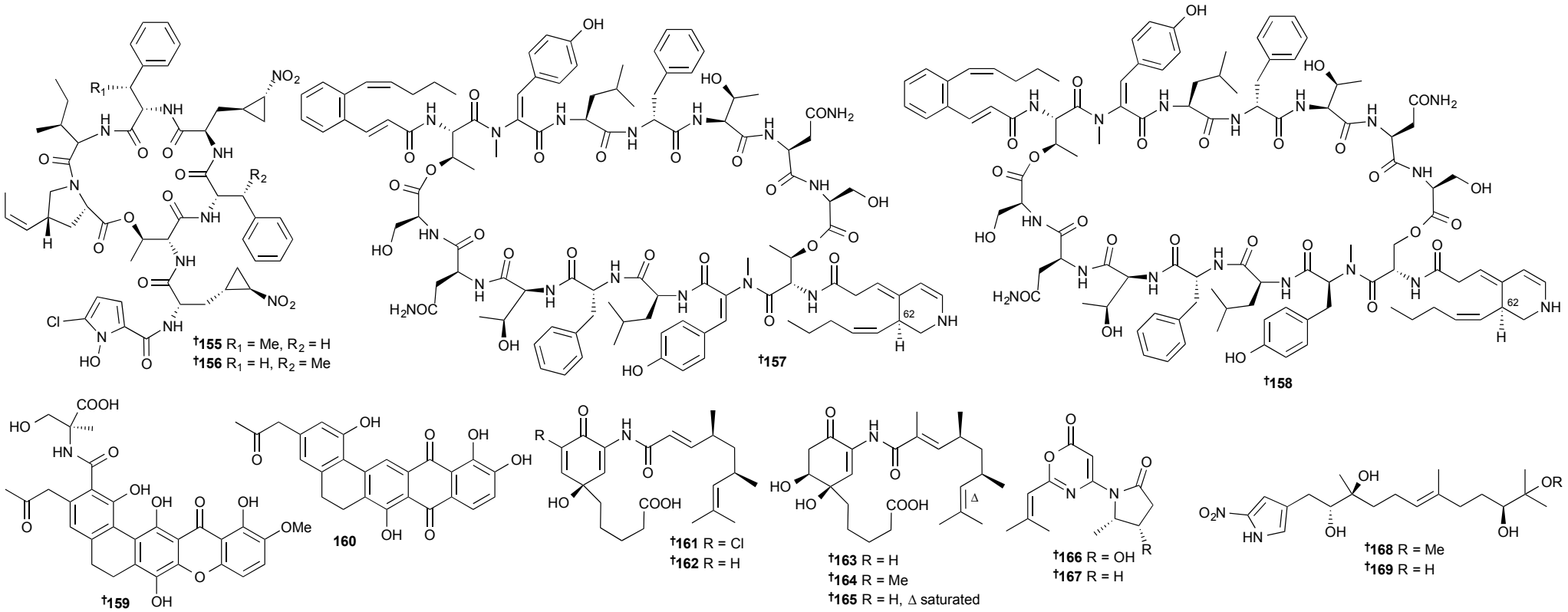
100 Actinobacteria *Streptomyces* sp. // Xiamen, Fujian Province, China // Divergolide congeners illuminate alternative reaction channels for ansamycin diversification
141 // N // divergolide I // not active against *C. albicans, P. notatum*. active against range of Gram-(+ve) bacteria // * // *
142 // N // divergolide J // not active against *C. albicans, P. notatum*. no AB activity // * // *
143 // N // divergolide K // not active against *C. albicans, P. notatum*. no AB activity // * // *
144 // N // divergolide L // not active against *C. albicans, P. notatum*. // * // *
145 // N // divergolide M // not active against *C. albicans, P. notatum*. // * // *
146 // N // divergolide N // not active against *C. albicans, P. notatum*. // * // *

101 Actinobacteria *Actinomycetospora chlora* // Vava'u, Tonga // Thiasporines A–C, thiazine and thiazole derivatives from a marine-derived *Actinomycetospora chlora*
147 // N // thiasporine A // IC_{50} 5.4 µg/mL against H2122. inactive against HCC366, A549 & HCC44 // * // *
148 // N // thiasporine B // no significant cytotox. against 4 HTCL // * // *
149 // N // thiasporine C // no significant cytotox. against 4 HTCL // * // *

102 Actinobacteria *Lechevalieria aerocolonigenes* // * // Mangromicin C, a new analog of mangromicin
150 // N // mangromicin C // potent scavenging activity // isolated from a rare actinomycete // *

104 Actinobacteria *Streptomyces qinglanensis* // Qinglan Harbour, Hainan, China // PreQ0 base, an unusual metabolite with anti-cancer activity from *Streptomyces qinglanensis* 172205
151 // M // PreQ0 base/7-cyano-7-deazaguanine // mod. cytotox. against HeLa, weak a-glucosidase activity // • // **s98**

105 Actinobacteria *Streptomyces griseus* // Rushan, Shandong, China // New bioactive derivatives of nonactic acid from the marine *Streptomyces griseus* derived from the plant *Salicornia* sp.
152 // N // butyl homononactate // tested against 5 HTCL. IC50's in range 0.18 - 4.9 µM. weak AB activity // abs. config. based on optical rotation data and comparisons // *
153 // N // butyl nonactate // not cytotox., weak AB activity // abs. config. based on optical rotation data and comparisons // *
154 // N // 8-acetyl homononactic acid // not cytotox., weak AB activity // abs. config. based on optical rotation data and comparisons // *



107 Actinobacteria *Streptomyces* sp. // Mohang mudflat, Buan, South Korea // Hormaomycins B and C: new antibiotic cyclic depsipeptides from a marine mudflat-derived *Streptomyces* sp.
155 // N // hormaomycin B // ~4-32 less active than hormaomycin against 4 Gram- (+) bacteria // abs. config. by comparative CD and NMR with hormaomycin // *
156 // N // hormaomycin C // ~4-32 less active than hormaomycin against 4 Gram- (+) bacteria // abs. config. by comparative CD and NMR with hormaomycin // *

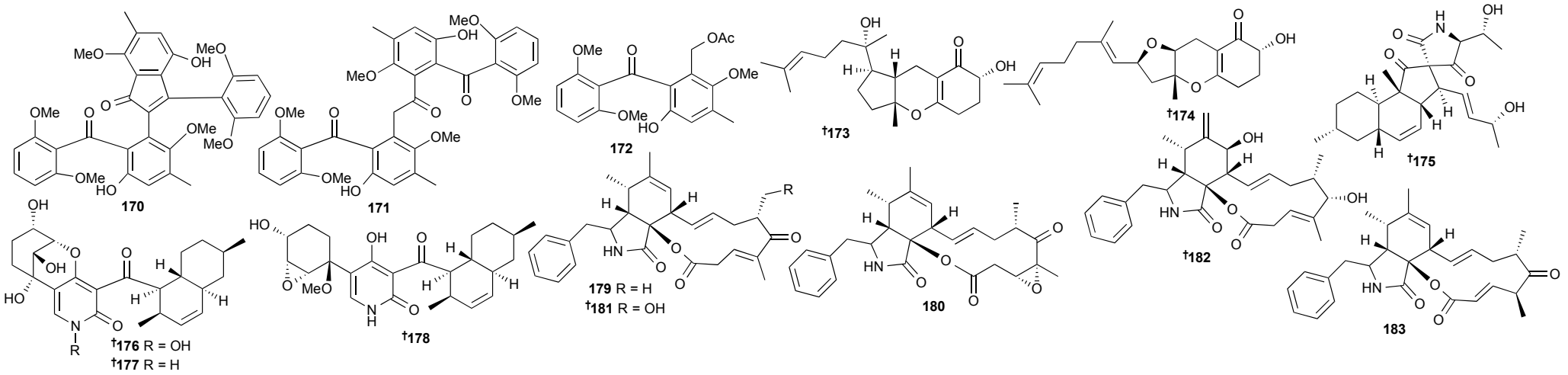
108 Actinobacteria *Streptomyces* sp. // Buan, S. Korea // Mohangamides A and B, new dilactone-tethered pseudo-dimeric peptides inhibiting *Candida albicans* isocitrate lyase
157 // N // mohangamide A // IC_{50} 4.4 µM against isocitrate lyase. no AB, AF activities or cytotox. // abs. config. from amino acid analysis and derivatisation // *
158 // N // mohangamide B // IC_{50} 20.5 µM against isocitrate lyase. no AB, AF activities or cytotox. // abs. config. from amino acid analysis and derivatisation // *

109 Actinobacteria *Streptomyces* sp. // Buan, S. Korea // Pentacyclic antibiotics from a tidal mud flat-derived actinomycete
159 // N // buanmycin // IC_{50} 0.8-1.9µM against 5 HTCL. inactive K562. very active against *S. enterica*. good sortase A activity // abs. config. by X-ray and Marfeys // *
160 // N // buanquinone // mod. activity against K562, but not 5 other HTCL. no AB activity // * // *

110 Actinobacteria *Streptomyces* sp. // Shinui Is., S. Korea // Salternamides A–D from a halophilic *Streptomyces* sp. actinobacterium
161 // N // salternamide A // IC_{50} in range 0.96-36 µM against 6 HTCL. weak Na^+/K^+ ATPase inhib. // abs. config. by Mosher, *J*-based analysis and CD // *
162 // N // salternamide B // IC_{50} in range 27->1006 µM against 6 HTCL // abs. config. by Mosher, *J*-based analysis and CD // *
163 // N // salternamide C // IC_{50} >100µM against 6 HTCL // abs. config. by Mosher, *J*-based analysis and CD // *
164 // N // salternamide D // IC_{50} in range 15->100 µM against 6 HTCL. weak Na^+/K^+ ATPase inhib. // abs. config. by Mosher, *J*-based analysis and CD // *

111 Actinobacteria *Streptomyces* sp. // Shinui Is., S. Korea // Salternamide E from a saltern-derived marine actinomycete *Streptomyces* sp.
165 // N // salternamide E // IC_{50} in range 0.57-14 µM against 6 HTCL. // CD comparisons with salternamides A-D // *

112 Actinobacteria *Streptomyces* sp. // Aphae Is., Jeollanamdo, S. Korea // Salinazinones A and B: pyrrolidinyl-oxazinones from solar saltern-derived *Streptomyces* sp. KMF-004
166 // N // salinazinone A // no inhib. NO production in BV-2 cells. // abs. config. by Moshers, CD and calculated ECD // *****
167 // N // salinazinone B // inhib. NO production in BV-2 cells. IC_{50} 17.7 μM // abs. config. by Moshers, CD and calculated ECD // *****
136 Actinobacteria *Streptomyces* sp. // * // Total synthesis and complete stereochemical assignment of heronapyrroles A and B
168 // R // (+)-heronapyrrole A // * // abs. config.is 7*R*,8*S*,15*S* by synthesis // **s99**
169 // R // (+)-heronapyrrole B // * // abs. config.is 7*R*,8*S*,15*S* by synthesis // **s99**



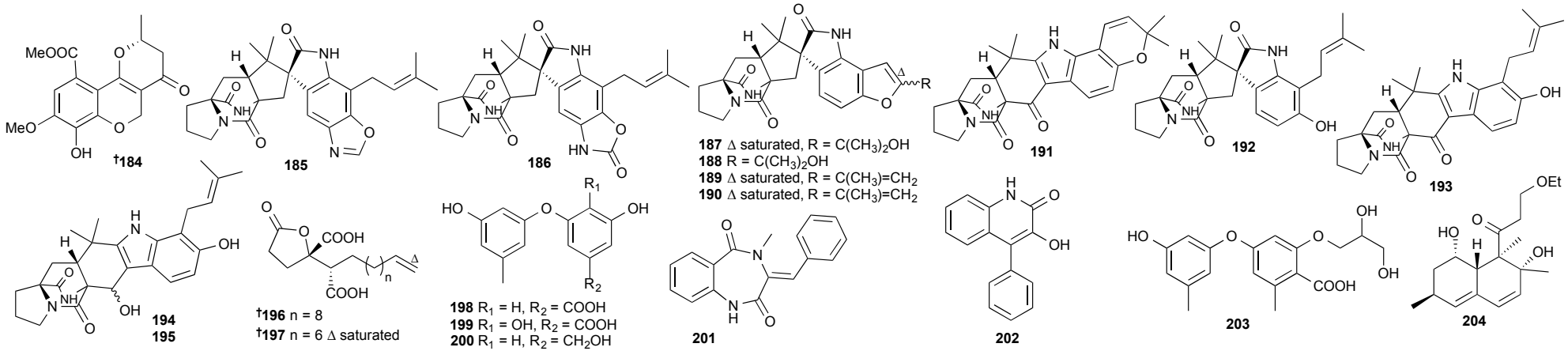
168 Ascomycota *Acremonium* sp. // (Porifera, *Suberites japonicas*) Ga-geo Is., S. Korea // Acredinones A and B, voltage-dependent potassium channel inhibitors from the sponge-derived fungus *Acremonium* sp. F9A015
170 // N // acredinone A // inhib. of voltage-dependent K^+ channel // * // *
171 // N // acredinone B // inhib. of voltage-dependent K^+ channel // * // *
172 // N // preacredinone A // inactive // * // *

169 Ascomycota *Alternaria* sp. // (sediment) South Atlantic Ridge // New tricycloalternarenes from fungus *Alternaria* sp.
173 // N // tricycloalternarene I // inactive AB vs 3 strains // * // *
174 // N // tricycloalternarene J // inactive AB vs 3 strains // * // *

170 Ascomycota *Alternaria* sp. // (sea urchin, *Anthocidaris crassipina*) Osaka Bay, Japan // Altercrasin A, a novel decalin derivative with spirotetramic acid, produced by a sea urchin-derived *Alternaria* sp.
175 // N // altercrasin A // weak activity vs 1 HTCL and 1 mammalian CL // * // *

171 Ascomycota *Arthrinium arundinis*, *Apiospora montagnei* // (Porifera, *Phakellia fusca*) Xisha Is., China // Arthpyrones A–C, pyridone alkaloids from a sponge-derived fungus *Arthrinium arundinis* ZSDS1-F3
176 // N // arthpyrone A // strong activity vs 10 HTCL, mod. vs AchE // * // *
177 // N // arthpyrone B // inactive // * // *
178 // N // arthpyrone C // strong activity vs 10 HTCL, potent vs AchE // * // *

172 Ascomycota *Arthrinium arundinis*, *Apiospora montagnei* // (Porifera, *Phakellia fusca*) Xisha Is., China // Cytotoxic cytochalasins from marine-derived fungus *Arthrinium arundinis*
179 // M // arthriniumnin A // inactive vs 10 HTCL // * // **s100**
180 // N // arthriniumnin B // inactive vs 10 HTCL // * // *
181 // N // arthriniumnin C // inactive vs 10 HTCL // * // *
182 // N // arthriniumnin D // inactive vs 10 HTCL // * // *
183 // M // ketocytochalasin // inactive vs 10 HTCL // * // **s100**



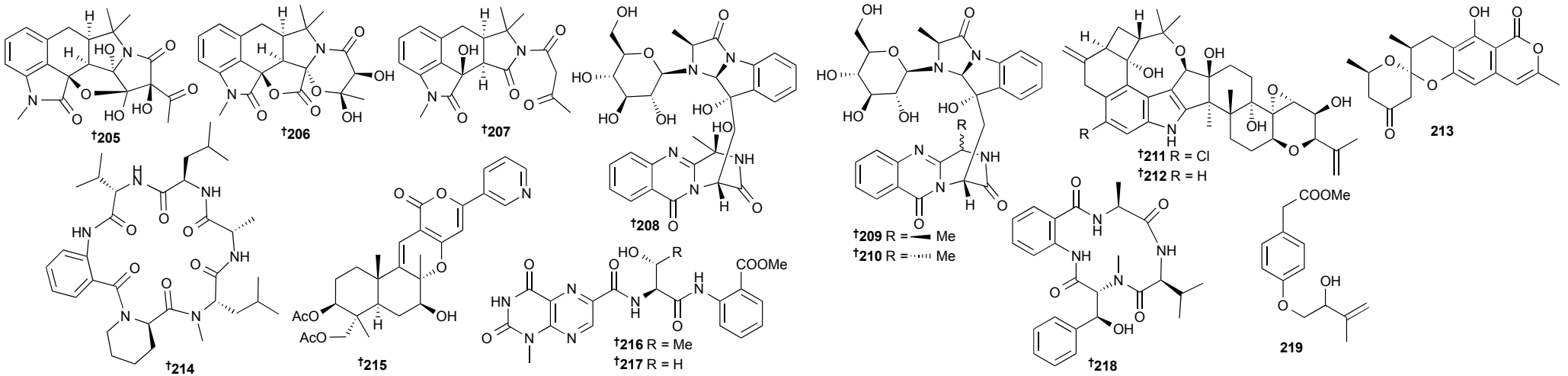
174 Ascomycota *Ascomycota* sp. // (sediment) Indian Ocean // Ascomycotin A, a new citromycetin analogue produced by Ascomycota sp. Ind19F07 isolated from deep sea sediment
184 // N // ascomycotin A // inactive AB vs 5 strains // * // *

180 Ascomycota *Aspergillus* sp. // (Mollusca, *Mytilus edulis*) Noto Peninsula, Japan // Bioconv. of 6-*epi*-notoamide T produces metabs. of unpreced. structs. in marine-derived *Aspergillus* sp.
185 // N // 6-*epi*-notoamide T3 // not tested // * // **s101**
186 // N // 6-*epi*-notoamide T4 // not tested // * // **s101**
187 // N // 6-*epi*-notoamide T5 // not tested // * // **s101**
188 // N // 6-*epi*-notoamide T6 // not tested // * // **s101**
189 // N // 6-*epi*-notoamide T7 // not tested // * // **s101**
190 // N // 6-*epi*-notoamide T8 // not tested // * // **s101**
191 // N // 6-*epi*-notoamide I // not tested // * // **s101**
192 // N // 6-*epi*-notoamide T9 // not tested // * // **s101**
193 // N // 6-*epi*-notoamide T10 // not tested // * // **s101**
194 // N // 6-*epi*-notoamide T11 // not tested // * // **s101**
195 // N // 6-*epi*-notoamide T12 // not tested // * // **s101**

181 Ascomycota *Aspergillus* sp. // (sea urchin, *Anthocidaris crassipina*) Qionghai, Hainan, China // Spiculisporic acid analogues of the marine-derived fungus, *Aspergillus candidus* strain HDf2, and their antibacterial activity
196 // N // spiculisporic acid F // mod. AB vs 2 strains // * // *
197 // N // spiculisporic acid G // mod. AB vs 2 strains // * // *

183 Ascomycota *Aspergillus carneus* // (seawater) South China Sea // Three new phenyl ether derivatives from *Aspergillus carneus* HQ889708
198 // N // * // not tested // * // *
199 // N // * // not tested // * // *
200 // N // * // not tested // * // *
201 // M // dehydrocyclopeptine // not tested // * // **s102**
202 // M // viridicatin // not tested // * // **s102**

184 Ascomycota *Aspergillus carneus* // (sediment) Sea of Okhotsk // New metabolites from a marine sediment-derived fungus, *Aspergillus carneus*
203 // N // glyceryl diorcinolic acid // inactive vs murine cell line and radical scavenging // * // *
204 // N // decumbenone D // inactive vs murine cell line and radical scavenging // * // *



185 Ascomycota *Aspergillus flavus* // (Porifera, *Agelas* aff. *nemoechinata*) Xisha Is., China // Speradines B–D, oxygenated cyclopiazonic acid alkaloids from the sponge-derived fungus *Aspergillus flavus* MXH-X104
205 // N // speradine B // inactive // * // *
206 // N // speradine C // inactive // * // *
207 // N // speradine D // inactive // * // *

186 Ascomycota *Aspergillus fumigatus* // (jellyfish, *Nemopilema nomurai*) S. coast of S. Korea // New glucosidated pyrazinoquinazoline indole alkaloids from fungus *Aspergillus fumigatus* derived of a jellyfish
208 // N // fumigatoside B // inactive // * // *
209 // N // fumigatoside C // inactive // * // *
210 // N // fumigatoside D // inactive // * // *

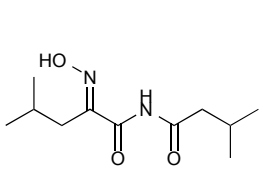
187 Ascomycota *Aspergillus nidulans* // (Rhodophyta, *Polysiphonia scopulorum*) Yantai, China // New indole-diterpenoids from the algal-associated fungus *Aspergillus nidulans*
211 // N // 19-hydroxypenitrem A // potent brine shrimp cytotox., mod. AB vs 4 strains // * // *
212 // N // 19-hydroxypenitrem E // potent brine shrimp cytotox., mod. AB vs 4 strains // * // *

188 Ascomycota *Aspergillus similanensis* // (Porifera, Rhabdermia sp.) Similan Is., Phang Nga Province, Thailand // A new cyclic hexapeptide and a new isocoumarin derivative from the marine sponge-associated fungus *Aspergillus similanensis* KUFA 0013
213 // N // similanpyrone C // not tested // * // *
214 // N // similanamide // weak activity vs 2 HTCL // * // *
215 // N // pyripyropene T // inactive // * // *

189 Ascomycota *Aspergillus terreus* // (sediment) Jeju Is., S. Korea // Lumazine peptides from the marine-derived fungus *Aspergillus terreus*
216 // N // terrelumamide A // causes mod. increase in insulin sensitivity in adipogenesis model, DNA binding agent // * // *
217 // N // terrelumamide B // causes mod. increase in insulin sensitivity in adipogenesis model // * // *

190 Ascomycota *Aspergillus terreus* // (gorgonian, *Echinogorgia aurantiaca*) S. China Sea // Antifouling compounds from the marine-derived fungus *Aspergillus terreus* SCSGAF0162.
218 // N // asperterrestride B // inactive // * // *

191 Ascomycota *Aspergillus westerdijkiae* // (sediment) S. China Sea // Westerdijkin A, a new hydroxyphenylacetic acid derivative from deep sea fungus *Aspergillus westerdijkiae*
219 // N // westerdijkin A // inactive // * // *



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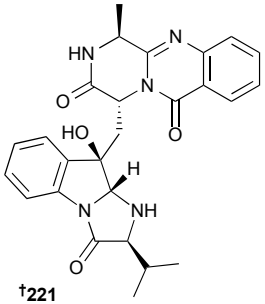
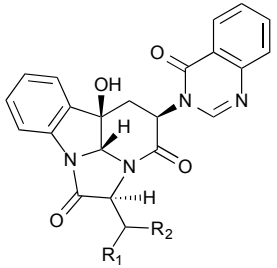
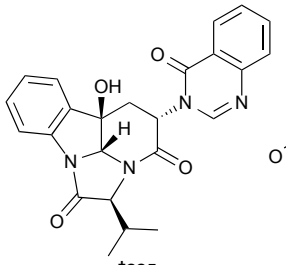


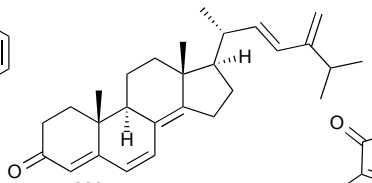
†**221**



†**222** $R_1 = R_2 = H$
†**223** $R_1 = Me$, $R_2 = H$
†**224** $R_1 = R_2 = Me$



†**225**



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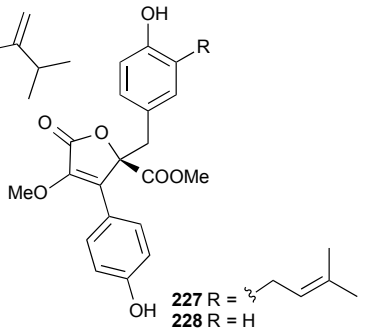
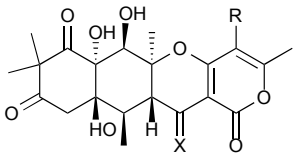


227 R =
228 R = H



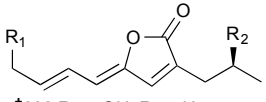
†**229** R = Me, X = O
†**230** R = Me, X = 2H
†**231** R = H, X = O
†**232** R = Me, X = ····· OH,H

192 Ascomycota *Aspergillus* sp. // (sediment) Otoque Is., Panama // Oximoaspergillimide, a fungal derivative from a marine isolate of *Aspergillus* sp.
220 // N // oximoaspergillimide // inactive // * // *

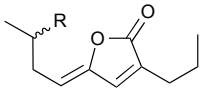
193 Ascomycota *Aspergillus* sp. // (driftwood) Jeju Is., S. Korea // Alkaloidal metabolites from a marine-derived *Aspergillus* sp. fungus
221 // N // fumiquinazoline S // mod. inhib. of Na^+/K^+-ATPase // * // *
222 // N // isochaetominine A // mod. inhib. of Na^+/K^+-ATPase // * // *
223 // N // isochaetominine B // mod. inhib. of Na^+/K^+-ATPase // * // *
224 // N // isochaetominine C // mod. inhib. of Na^+/K^+-ATPase // * // *
225 // N // 14-*epi*-isochaetominine C // mod. inhib. of Na^+/K^+-ATPase // * // *

196 Ascomycota *Aspergillus* sp. // (gorgonian, *Muricella abnormalis*) Xisha Is., S. China Sea // Bioact. steroid derivs. and butyrolactone derivs. from a gorgonian-derived *Aspergillus* sp.
226 // N // (22*E*)-ergosta-4,6,8(14),22,24(28)-pentaen-3-one // mod. antifouling (*B. amphitrite* larval settlement) // * // *
227 // M // 2-*O*-methylbutyrolactone I // AB vs *S. aureus* // * // **s103**
228 // M // 2-*O*-methylbutyrolactone II // mod. antifouling (*B. amphitrite* larval settlement), AB vs *S. aureus* // * // **s104**

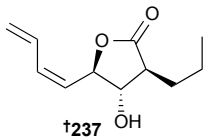
197 Ascomycota *Aspergillus* sp. // (Chlorophyta, *Enteromorpha* sp.) Jinjiang Dongshi salt pan, China // Aspertetranones A–D, putative meroterps. from algal-assoc. fungus *Aspergillus* sp.
229 // N // aspertetranone A // mod. inhib. of pro-inflammatory cytokines // * // *
230 // N // aspertetranone B // weak inhib. of pro-inflammatory cytokines // * // *
231 // N // aspertetranone C // weak inhib. of pro-inflammatory cytokines // * // *
232 // N // aspertetranone D // good inhib. of pro-inflammatory cytokines // * // *



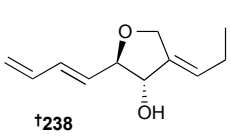
†**233** $R_1 = OH$, $R_2 = H$
†**234** $R_1 = H$, $R_2 = OH$



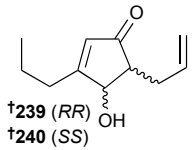
†**235** R = ····· OH
†**236** R = —— OH



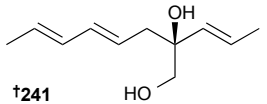
†**237**



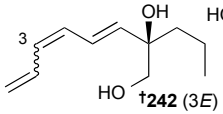
†**238**



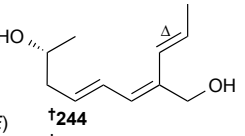
†**239** (*RR*)
†**240** (*SS*)



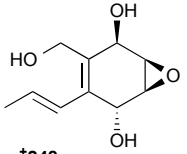
†**241**



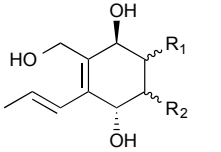
†**242** (3*E*)
†**243** (3*Z*)



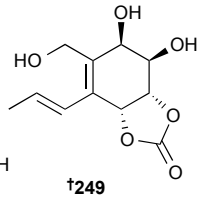
†**244**
†**245** Δ saturated



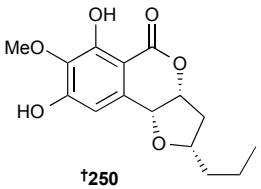
†**248**



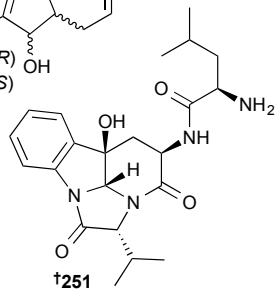
†**246** R_1 = —— OH, R_2 = ····· OH
†**247** R_1 = ····· Cl, R_2 = —— OH



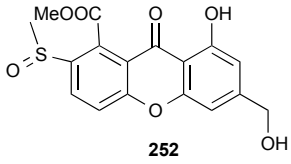
†**249**



†**250**



†**251**



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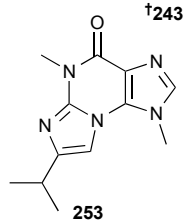
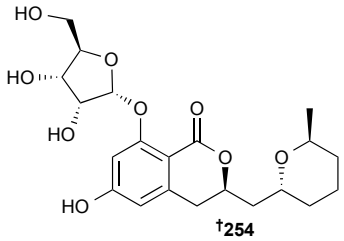


253

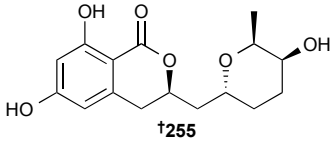
198 Ascomycota *Aspergillus* sp. // (unidentified sponge) Xisha Isl., China // New α-glucosidase inhibitors from a marine sponge-derived fungus, *Aspergillus* sp. OUCMDZ-1583
233 // N // aspergone A // mod. α-glucosidase inhib. // * // *
234 // N // aspergone B // mod. α-glucosidase inhib. // * // *
235 // N // aspergone C // mod. α-glucosidase inhib. // * // *
236 // N // aspergone D // mod. α-glucosidase inhib. // * // *
237 // N // aspergone E // mod. α-glucosidase inhib. // * // *
238 // N // aspergone F // mod. α-glucosidase inhib. // * // *
239 // N // aspergone G // mod. α-glucosidase inhib. // * // *
240 // N // aspergone H // mod. α-glucosidase inhib. // * // *
241 // N // aspergone I // mod. α-glucosidase inhib. // * // *
242 // N // aspergone J // mod. α-glucosidase inhib. // * // *
243 // N // aspergone K // mod. α-glucosidase inhib. // * // *
244 // N // aspergone L // mod. α-glucosidase inhib. // * // *
245 // N // aspergone M // mod. α-glucosidase inhib. // * // *
246 // N // aspergone N // mod. α-glucosidase inhib. // * // *
247 // N // aspergone O // mod. α-glucosidase inhib. // * // *
248 // N // aspergone P // mod. α-glucosidase inhib. // * // *
249 // N // aspergone Q // mod. α-glucosidase inhib. // * // *
250 // N // 6-*O*-demethylmonocerin // potent α-glucosidase inhib., mod. inhib. H1N1 // * // *

199 Ascomycota *Aspergillus* sp. // (isopod, *Ligia oceanica*) Zhoushan, Zhejiang, China // Asperginine, an unprecedented alkaloid from the marine-derived fungus *Aspergillus* sp.
251 // N // asperginine // inactive // * // *

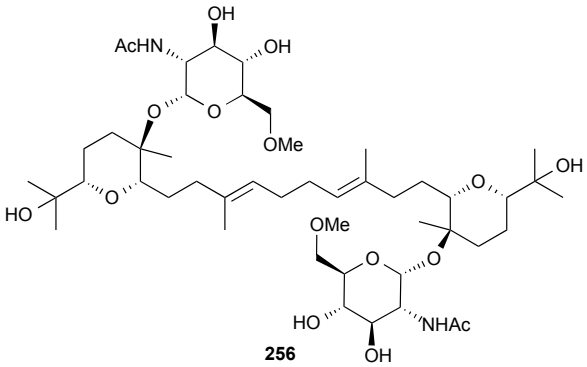
200 Ascomycota *Aspergillus* sp. // (sediment) Indian Ocean // Sydoxanthone C and acremolin B produced by deep-sea-derived fungus *Aspergillus* sp. SCSIO Ind09F01
252 // N // sydoxanthone C // inactive // * // *
253 // N // acremolin B // inactive // * // *



†**254**



†**255**



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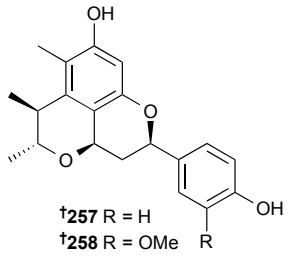
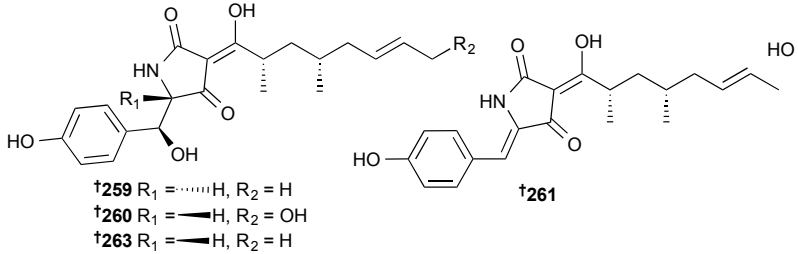


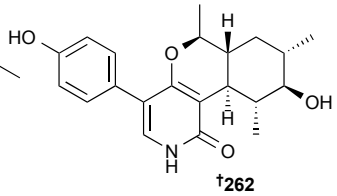
†**257** R = H
†**258** R = OMe

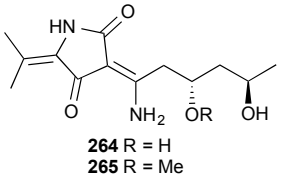
201 Ascomycota *Aspergillus* sp. // (unidentified red alga) Ross Sea // Dihydroisocoumarin derivatives from marine-derived fungal isolates and their anti-inflammatory effects in lipopolysaccharide-induced BV2 microglia
254 // N // cladosporin 8-*O*-α-ribofuranoside // anti-neuroinflammatory (inhibits NF-kB and p38 signalling pathways // * // *
255 // R // 5'-hydroxyasperentin // suppresses production of pro-inflammatory mediators // * // **s105**

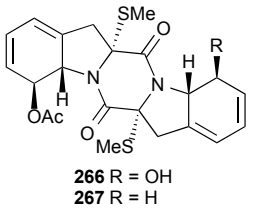
203 Ascomycota *Auxarthron reticulatum*, *Gymnoascus reticulatus* // (Porifera, *Ircinia variabilis*) Malta // GPR18 inhibiting amauromine and the novel triterpene glycoside auxarthonoside from the sponge-derived fungus *Auxarthron reticulatum*
256 // N // auxarthonoside // inactive // * // *

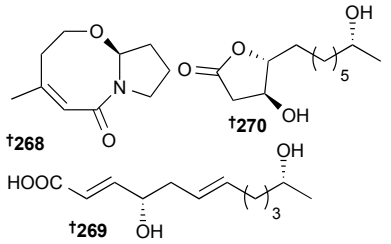
204 Ascomycota *Penicillium citrinum*, *Beauveria felina* // (unidentified bryozoan and mangrove, *Lumnitzera racemosa*) S. China Sea // Citrifelins A and B, citrinin adducts with a tetracyclic framework from cocultures of marine-derived isolates of *Penicillium citrinum* and *Beauveria felina*
257 // N // citrifelin A // weak AB vs 2 strains // * // *
258 // N // citrifelin B // weak AB vs 2 strains // * // *











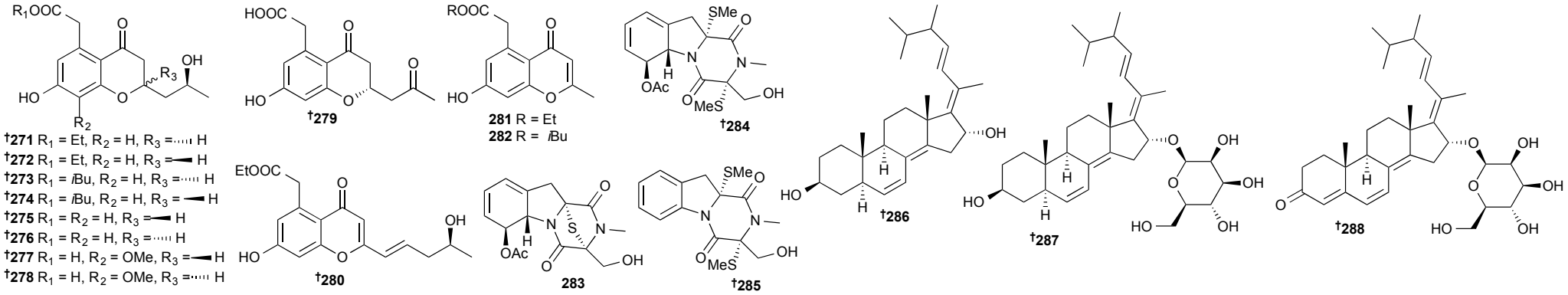
205 Ascomycota *Chaunopycnis* sp. // (false limpet, *Siphonaria* sp.) Moora Park, Queensland, Australia // New PKS-NRPS tetramic acids and pyridinone from an Australian marine-derived fungus, *Chaunopycnis* sp.
259 // N // chaunolidine A // mod., non-selective metal ion chelataion // simultaneously reported from the terrestrial fungus *Tolypocladium cylindrosporum* // **s106**
260 // N // chaunolidine B // mod., non-selective metal ion chelataion // * // *
261 // N // chaunolidine C // mod., non-selective metal ion chelataion, mod. AB vs 3 Gram-(+) strains // reported 2015 from the terrestrial fungus *Tolypocladium cylindrosporum* // **s106**
262 // N // chaunolidone A // potent inhib. of NCI-H460 // * // *
263 // M // F-14329 // mod., non-selective metal ion chelataion // * // **s107**

209 Ascomycota *Cladosporium sphaerospermum* // (sediment) Pacific Ocean // Cladosins F and G, two new hybrid polyketides from the deep-sea-derived *Cladosporium sphaerospermum*
264 // N // cladosin F // inactive // * // *
265 // N // cladosin G // inactive // * // *

210 Ascomycota *Cladosporium* sp. // (sediment) Yangshashan Bay, Ningbo, Zhejiang Province, China // Preparative separation of sulfur-containing diketopiperazines from marine fungus *Cladosporium* sp. using high-speed counter-current chromatography in stepwise elution mode
266 // N // cladosporin A // weak activity vs 1 HTCL // * // *
267 // N // cladosporin B // weak activity vs 1 HTCL // * // *

211 Ascomycota *Cladosporium* sp. // (gorgonian, *Anthrogorgia ochracea*) Weizhou coral reef, S. China Sea // Bioactive 7-oxabicyclic[6.3.0]lactam and 12-membered macrolides from a gorgonian-derived *Cladosporium* sp. fungus
268 // N // cladosporilactam A // good inhib. (IC_{50} 0.76 μM) of 1 HTCL // * // *

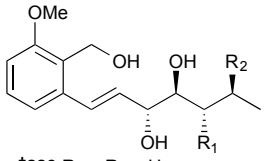
212 Ascomycota *Cladosporium* sp. // (unidentified soft coral) Guangzhou, China // Lipid-lowering polyketides from a soft coral-derived fungus *Cladosporium* sp. TZP29
269 // N // cladospolide E // potent lipid-lowering activity // * // *
270 // N // cladospolide F // potent lipid-lowering activity // * // *



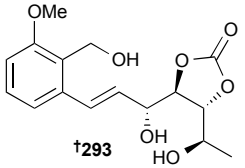
213 Ascomycota *Corynespora cassiicola* // (unidentified sponge) Xisha Is., China // Chromone derivatives from a sponge-derived strain of the fungus *Corynespora cassiicola*
- **271** // N // corynechromone A // inactive // * // *
- **272** // N // corynechromone B // inactive // * // *
- **273** // N // corynechromone C // inactive // * // *
- **274** // N // corynechromone D // inactive // * // *
- **275** // N // corynechromone E // inactive // * // *
- **276** // N // corynechromone F // inactive // * // *
- **277** // N // corynechromone G // inactive // * // *
- **278** // N // corynechromone H // inactive // * // *
- **279** // N // corynechromone I // inactive // * // *
- **280** // N // corynechromone J // inactive // * // *
- **281** // N // corynechromone K // inactive // * // *
- **282** // N // corynechromone L // inactive // * // *

216 Ascomycota *Dichotomomyces cejpii* // (Porifera, *Callyspongia flammea*) Bare Is., Sydney, Australia // Epipolythiodiketopiperazines from the marine derived fungus *Dichotomomyces cejpii* with NF-κB inhibitory potential
- **283** // N // 6-acetylmonodethiogliotoxin // anti-inflammatory via NF-kB inhib. // * // *
- **284** // M // 6-acetylbisdethiobis(methylthio)gliotoxin // anti-inflammatory via NF-kB inhib. // * // **s108**
- **285** // M // 5a,6-anhydrobisdethiobis(methylthio)gliotoxin // not tested // * // **s109**

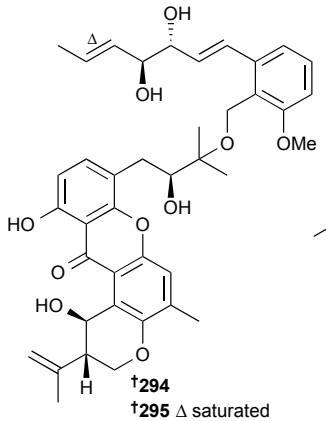
217 Ascomycota D*ichotomomyces cejpii*, *Aspergillus cejpii* // (Porifera, *Callyspongia flammea*) Bare Is., Sydney, Australia // Aβ-42 lowering agents from the marine-derived fungus *Dichotomomyces cejpii*
- **286** // N // 16-*O*-desmethylasporyergosterol // not tested // * // *
- **287** // N // 16-*O*-desmethylasporyergosterol-β-D-mannoside // mod. AB-42 lowering activity // * // *
- **288** // N // 16-*O*-desmethylasporyergosteron-β-D-mannoside // not tested // * // *



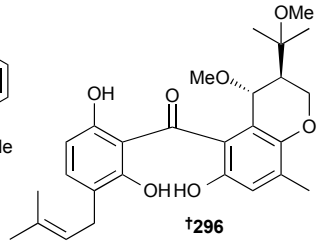
†**289** $R_1 = R_2 = H$
†**290** $R_1 = R_2 = OH$
†**291** $R_1 = OH, R_2 = OMe$
†**292** $R_1 = OH, R_2 = Cl$



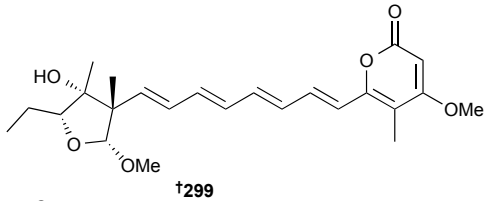
†**293**



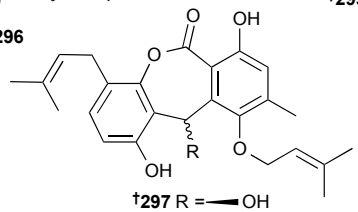
†**294**
†**295** Δ saturated



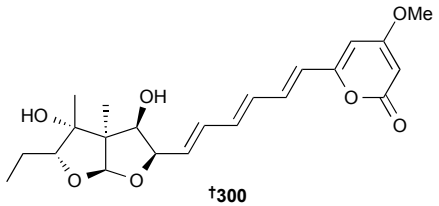
†**296**



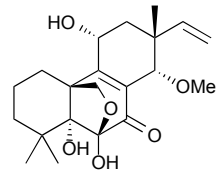
†**299**



†**297** R = OH
†**298** R = OH



†**300**

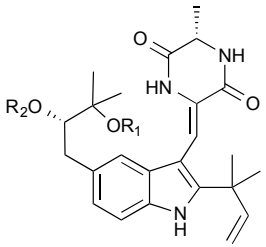


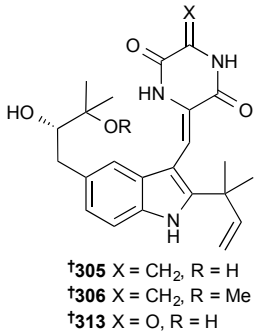
†**301**

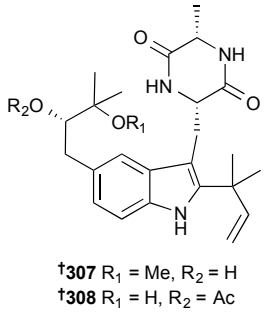
218 Ascomycota *Emericella variecolor* // (Porifera, *Cinachyrella* sp.) Yongxing Is,, S. China Sea // Varioxiranols A–G and 19-O-methyl-22-methoxypre-shamixanthone, PKS and hybrid PKS-derived metabolites from a sponge-associated *Emericella variecolor* fungus
289 // N // varioxiranol A // weak lipid lowering effect // * // *
290 // N // varioxiranol B // inactive // * // *
291 // N // varioxiranol C // inactive // * // *
292 // N // varioxiranol D // inactive // * // *
293 // N // varioxiranol E // inactive // * // *
294 // N // varioxiranol F // inactive // * // *
295 // N // varioxiranol G // inactive // * // *
296 // N // 19-*O*-methyl-22-methoxypre-shamixanthone // inactive // * // *

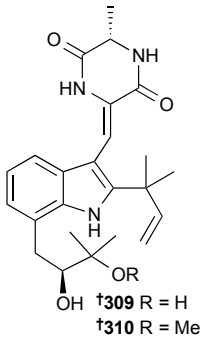
219 Ascomycota *Emericella variecolor*, *Aspergillus stellatus* // (Porifera, *Cinachyrella* sp.) S. China Sea // Varioxiranols I–L, new lactones from a sponge-associated *Emericella variecolor* fungus
297 // N // varioxiranol I // mod. activity vs 3 HTCL // * // *
298 // N // varioxiranol J // mod. activity vs 3 HTCL // * // *
299 // N // varioxiranol K // mod. activity vs 3 HTCL // * // *
300 // N // varioxiranol L // mod. activity vs 3 HTCL // * // *

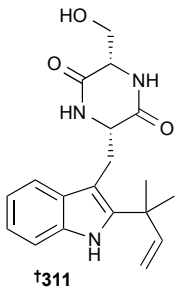
220 Ascomycota *Epicoccum* sp. // (sea cucumber, *Apostichopus japonicus*) location unspecified // Bioactive isopimarane diterpenes from the fungus, *Epicoccum* sp. HS-1, associated with *Apostichopus japonicus*
301 // N // * // good α-glucosidase inhib. // * // *

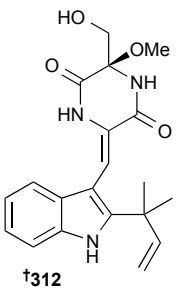


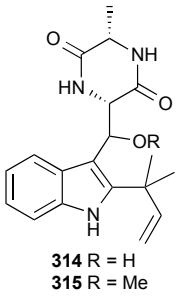


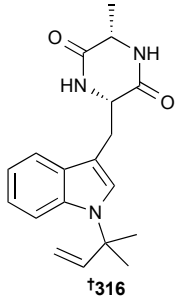




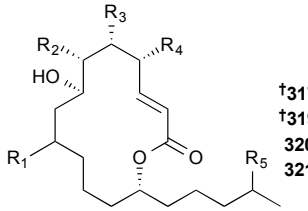




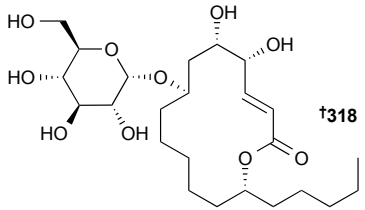




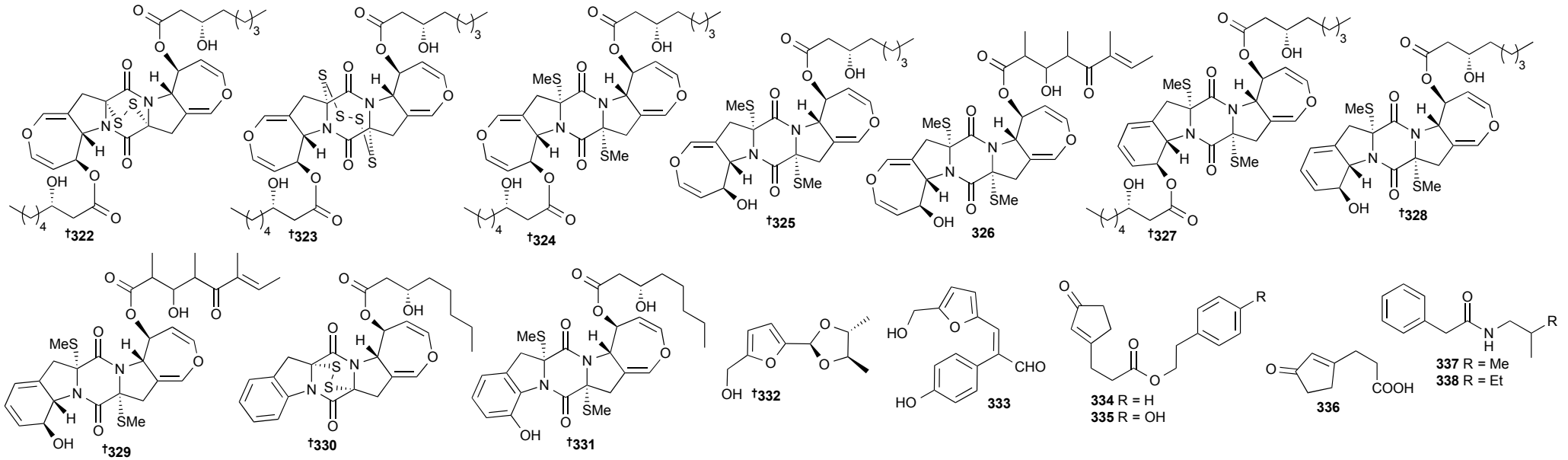
221 Ascomycota *Eurotium rubrum*, *Aspergillus ruber* // S. Atlantic Ocean // Neoechinulin B and its analogues as potential entry inhibitors of influenza viruses, targeting viral hemagglutinin
302 // N // rubrumline A // weak activity vs H1N1 virus // * // *
303 // N // rubrumline B // weak activity vs H1N1 virus // * // *
304 // N // rubrumline C // weak activity vs H1N1 virus // * // *
305 // N // rubrumline D // weak activity vs H1N1 virus // * // *
306 // N // rubrumline E // weak activity vs H1N1 virus // * // *
307 // N // rubrumline F // weak activity vs H1N1 virus // * // *
308 // N // rubrumline G // weak activity vs H1N1 virus // * // *
309 // N // rubrumline H // weak activity vs H1N1 virus // same as rubrumazine B in ref. **379** // *
310 // N // rubrumline I // weak activity vs H1N1 virus // same as rubrumazine A in ref. **379** // *
311 // N // rubrumline J // weak activity vs H1N1 virus // * // *
312 // N // rubrumline K // weak activity vs H1N1 virus // * // *
313 // N // rubrumline L // weak activity vs H1N1 virus // * // *
314 // N // rubrumline M // weak activity vs H1N1 virus // * // *
315 // N // rubrumline N // weak activity vs H1N1 virus // * // *
316 // N // rubrumline O // weak activity vs H1N1 virus // * // *



†317 $R_1 = R_2 = R_3 = R_5 = H$, $R_4 = OH$
†319 $R_1 = R_5 = H$, $R_2 = R_3 = R_4 = OH$
320 $R_1 = R_2 = H$, $R_3 = R_4 = R_5 = OH$
321 $R_1 = R_3 = OH$, $R_2 = R_4 = R_5 = H$



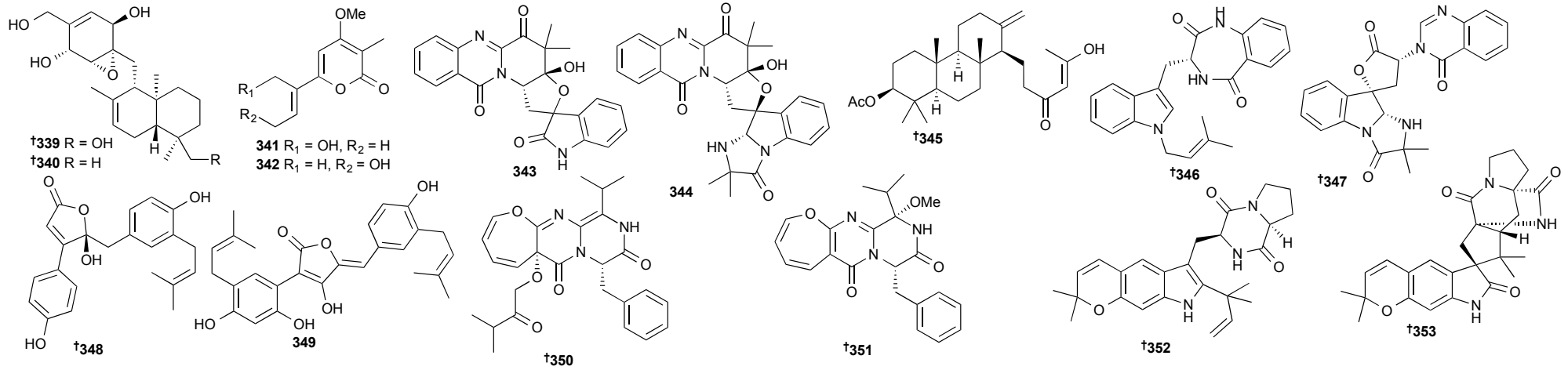
224 Ascomycota *Gliomastix* sp. // (Porifera, *Phakellia fusca*) Xisha Is., China // Gliomasolides A–E, unusual macrolides from a sponge-derived fungus *Gliomastix* sp. ZSDS1-F7-2
317 // N // gliomasolide A // mod. activity vs 1 HTCL // * // *
318 // N // gliomasolide B // inactive // * // *
319 // N // gliomasolide C // inactive // * // *
320 // N // gliomasolide D // inactive // * // *
321 // N // gliomasolide E // inactive // * // *



225 Ascomycota *Graphium* sp. // (sediment) Ishigaki Is., Okinawa, Japan // Graphiumins, new thiodiketopiperazines from the marine-derived fungus *Graphium* sp. OPMF00224
322 // N // graphiumin A // mod. inhib. of pigment production in MRSA // * // *
323 // N // graphiumin B // inactive // * // *
324 // N // graphiumin C // inactive // * // *
325 // N // graphiumin D // mod. inhib. of pigment production in MRSA // * // *
326 // N // graphiumin E // mod. inhib. of pigment production in MRSA // * // *
327 // N // graphiumin F // inactive // * // *
328 // N // graphiumin G // mod. inhib. of pigment production in MRSA // * // *
329 // N // graphiumin H // mod. inhib. of pigment production in MRSA // * // *

226 Ascomycota *Graphium* sp. // (sediment) Ishigaki Is., Okinawa, Japan // Graphiumins I and J, new thiodiketopiperazines from the marine-derived fungus *Graphium* sp. OPMF00224
330 // N // graphiumin I // good inhib. of pigment production in MRSA // * // *
331 // N // graphiumin J // good inhib. of pigment production in MRSA // * // *

227 Ascomycota *Hypocrea koningii*, *Trichoderma koningii* // (Porifera, *Phakellia fusca*) Yongxing Is., S. China Sea // New furan and cyclopentenone derivatives from the sponge-associated fungus *Hypocrea Koningii* PF04
332 // N // hypofuran A // mod. AB vs *S. aureus*, mod. radical scavenging (DPPH) // * // *
333 // N // hypofuran B // inactive // * // *
334 // N // hypocrenone A // inactive // * // *
335 // N // hypocrenone B // inactive // * // *
336 // N // hypocrenone C // inactive // * // *
337 // M // * // mod. AB vs *S. aureus*, mod. radical scavenging (DPPH) // * // **s110**
338 // M // * // inactive // * // **s111**



231 Ascomycota *Lophiostoma* sp. // (soft coral, *Lophiostoma* sp.) Weizhou Is., S. China Sea // Merosesquiterpenoids and 10-membered macrolides from a coral-derived *Lophiostoma* sp.
339 // N // craterellin D // inactive // * // *
340 // M // craterellin A // mod. AB vs 4 strains // * // **s112**

232 Ascomycota *Nectria* sp. // (Porifera, *Gelliodes canosa*) S. China Sea // Two new monoterpenoid α-pyrones from a fungus Nectria sp. HLS206 associated with the marine sponge *Gelliodes carnosa*
341 // N // nectriapyrone C // inactive // * // *
342 // N // nectriapyrone D // inactive // simultaneously isolated from a terrestrial fungus as gulpyrone B // **s113**

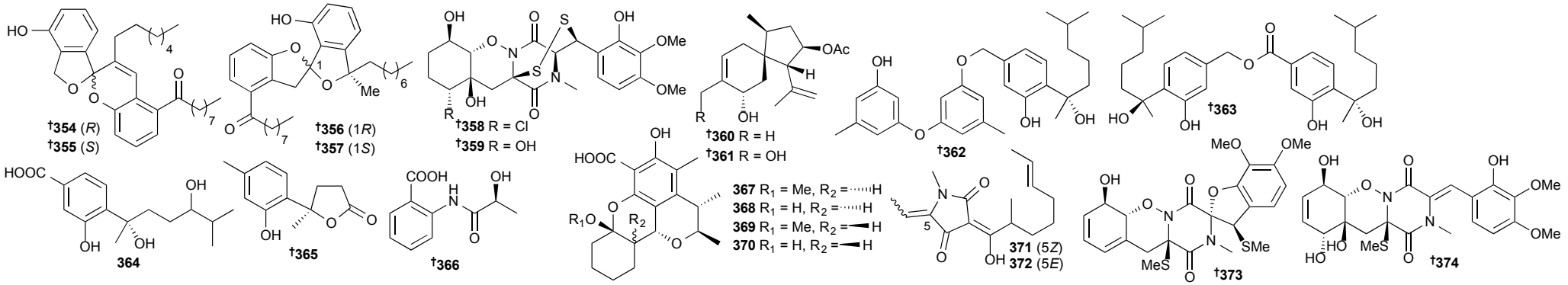
234 Ascomycota *Neosartorya fischeri*, *Aspergillus fischeri* // (sediment) Hainan Province, China // Two new alkaloids from a marine-derived fungus *Neosartorya fischeri*
343 // N // tryptoquivaline T // mod. activity vs HL-60 // * // *
344 // N // tryptoquivaline U // mod. activity vs HL-60 // * // *

235 Ascomycota *Neosartorya takakii* // (Rhodophyta, Amphiroa sp.) Samaesarn Is., Chonburi Province, Thailand // A new meroditerpene and a new tryptoquivaline analog from the algicolous fungus *Neosartorya takakii* KUFC 7898
345 // N // sartorenol // inactive // * // *
346 // N // takakiamide // inactive // * // *
347 // N // tryptoquivaline U // inactive // * // *

236 Ascomycota *Paecilomyces variotii* // (Rhodophyta, *Grateloupia turuturu*) Qingdao, China // New butenolide derivatives from the marine-derived fungus *Paecilomyces variotii* with DPPH radical scavenging activity
348 // N // butyrolactone IX // mod. radical scavenging activity (DPPH) // * // *
349 // N // aspulvinone O // potent radical scavenging activity (DPPH) // * // *

237 Ascomycota *Paecilomyces variotii* // (Rhodophyta, *Grateloupia turuturu*) Qingdao, China // Oxepine-containing diketopiperazine alkaloids from the algal-derived endophytic fungus *Paecilomyces variotii* EN-291
350 // N // varioloid A // mod. AB vs 7 strains, good activity vs plant pathogenic fungus *Fusarium graminearum* // * // *
351 // N // varioloid B // mod. AB vs 7 strains, good activity vs plant pathogenic fungus *Fusarium graminearum* // * // *

238 Ascomycota *Paecilomyces variotii* // (Rhodophyta, *Grateloupia turuturu*) Qingdao, China // Prenylated indole alkaloids from the marine-derived fungus *Paecilomyces variotii*
352 // N // dihydrocarneamide A // v. weak activity vs NCI-H460 // * // *
353 // N // iso-notoamide B // v. weak activity vs NCI-H460 // * // *



239 Ascomycota *Paecilomyces variotii* // (jellyfish, *Nemopilema nomurai*) S. Korea // Dimeric octaketide spiroketals from the jellyfish-derived fungus *Paecilomyces variotii* J08NF-1
354 // N // paeciloketal A // mod. AB vs *Vibrio ichthyoenteri* (as racemate) // * // *
355 // N // *epi*-paeciloketal A // mod. AB vs *Vibrio ichthyoenteri* (as racemate) // * // *
356 // N // paeciloketal B // inactive // * // *
357 // N // 1-*epi*-paeciloketal B // inactive // * // *

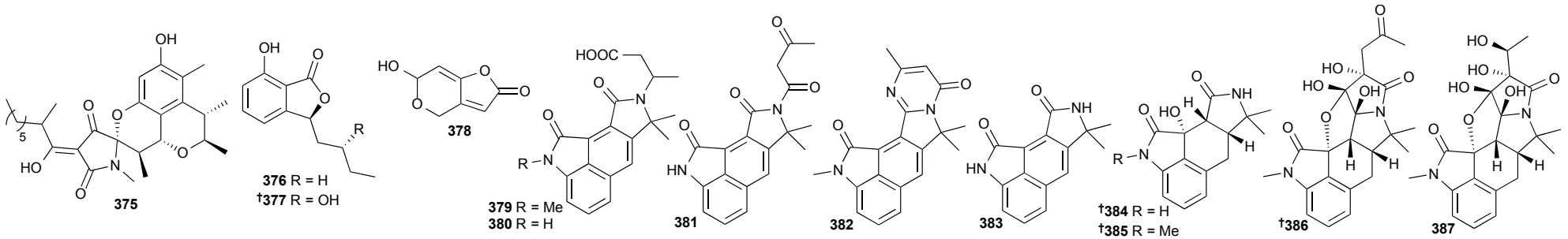
240 Ascomycota *Penicillium adametzioides* // (unidentified sponge) Hainan Is., China // Bisthiodiketopiperazines and acorane sesquiterpenes produced by the marine-derived fungus *Penicillium adametzioides* AS-53 on different culture media
358 // N // adametizine A // mod. AB vs 5 strains, good cytotox. vs brine shrimp // * // *
359 // N // adametizine B // weak AB vs *S. aureus* only // * // *
360 // N // adametacorenol A // inactive // * // *
361 // N // adametacorenol B // mod., selective activity vs NCI-H446 // * // *

241 Ascomycota *Penicillium aculeatum* // (sediment) S. China Sea // Antimicrob. phenolic bisabolanes and derivs. from *Penicillium aculeatum* SD-321, a deep sea sediment fungus
362 // N // peniciaculin A // good AB vs 3 strains // * // *
363 // N // peniciaculin B // mod. AB vs 2 strains // * // *
364 // N // (7*S*)-(−)-10-hydroxysydonic acid // inactive // * // *
365 // N // 1-hydroxyboivinianin // mod. AB vs 2 strains // * // *

242 Ascomycota *Penicillium chrysogenum* // * // Stereochem. invest. of a novel boil. active substance from the secondary metabolites of marine fungus *Penicillium chrysogenum* SYP-F-2720
366 // R // (*S*)-2-(2-hydroxypropanamido) benzoic acid // good anti-inflammatory and analgesic activity // * // *

243 Ascomycota *Penicillium citrinum* // (sediment) Langqi Is., Fujian, China // Four new penicitrinols and two new penicillenols from the marine-derived fungus *Penicillium citrinum*
367 // N // penicitrinol L // weak activity vs 1 HTCL // * // *
368 // N // penicitrinol M // weak activity vs 1 HTCL // * // *
369 // N // penicitrinol N // inactive // * // *
370 // N // penicitrinol O // inactive // * // *
371 // N // penicillenol D1 // weak activity vs 2 HTCL // * // *
372 // N // penicillenol D2 // weak activity vs 2 HTCL // * // *

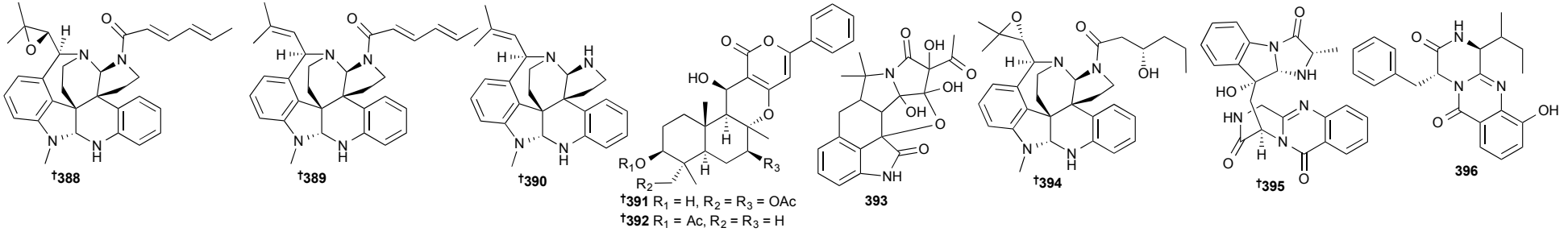
244 Ascomycota *Penicillium adametzioides* // (unidentified sponge) Wenchang, Hainan, China // Peniciadametizine A, a dithiodiketopiperazine with a unique spiro[furan-2,7'-pyrazino[1,2-b][1,2]oxazine] skeleton, and a related analogue, peniciadametizine B, from the marine sponge-derived fungus *Penicillium adametzioides*
373 // N // peniciadametizine A // mod. inhib. of plant pathogenic fungus *Alternaria brassicae* // * // *
374 // N // peniciadametizine B // mod. inhib. of plant pathogenic fungus *Alternaria brassicae* // * // *



245 Ascomycota *Penicillium citrinum* // (sediment) Langqi Is., Fujian, China // Antitumor effects and related mechanisms of penicitrinine A, a novel alkaloid with a unique spiro skeleton from the marine fungus *Penicillium citrinum*
375 // N // penicitrinine A // anti-proliferative vs multiple HTCL via apoptosis induction. suppresses metastasis // * // *

248 Ascomycota *Penicllium claviforme*, *Penicillium vulpinum* // (seagrass, *Zostera marina*) Peter the Great Gulf // New 3-[2′(*R*)-hydroxybutyl]-7-hydroxyphthalide from marine isolate of the fungus *Penicillium claviforme*
376 // M // (–)-3-butyl-7-hydroxyphthalide // not tested // * // **s114**
377 // N // 3-[2'-(*R*)-hydroxybutyl]-7-hydroxyphthalide // not tested // * // *
378 // M // isopatulin // not tested // * // **s115**

249 Ascomycota *Penicillium commune* // (sediment) S. China Sea // Oxindole alkaloids from the fungus *Penicillium commune* DFFSCS026 isolated from deep-sea-derived sediments
379 // N // cyclopiamide B // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
380 // N // cyclopiamide C // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
381 // N // cyclopiamide D // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
382 // N // cyclopiamide E // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
383 // N // cyclopiamide F // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
384 // N // cyclopiamide G // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
385 // N // cyclopiamide H // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
386 // N // cyclopiamide J // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // * // *
387 // M // cyclopiamide I // weak toxicity to brine shrimp. inactive vs 2 HTCL and H1N1 virus // already published as aspergilline D // **s116**

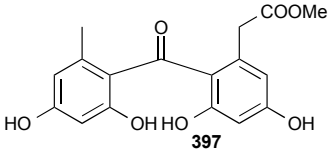


252 Ascomycota *Penicillium expansum* // Technical University of Denmark // Elucidation of the concise biosynthetic pathway of the communesin indole alkaloids
388 // N // communesin I // not tested // see **394** for a different compound named communesin I but **388** is first // **s117**
389 // N // communesin J // not tested // * // **s117**
390 // N // communesin K // not tested // * // **s117**

253 Ascomycota *Penicillium concentricum* // (seawater) Binzhou, China // Phenylpyropenes E and F: new meroterpenes from the marine-derived fungus *Penicillium concentricum* ZLQ-69
391 // N // phenylpyropene E // mod. activity vs 1 HTCL, inactive vs 2 other HTCL // * // *
392 // N // phenylpyropene F // mod. activity vs 1 HTCL, inactive vs 2 other HTCL // * // *

254 Ascomycota *Penicillium dipodomyicola* // (intertidal tree, *Clerodendrum inerme*) Nanhai, China // A new alkaloid from *Penicillium dipodomyicola*
393 // N // speradine B // not tested // name taken for similar compound. Scifinder gives both the same CAS number // *

255 Ascomycota *Penicillium expansum* // (seawater) Indian Ocean // Alkaloids with cardiovascular effects from the marine-derived fungus *Penicillium expansum* Y32
394 // N // communesin I // mod. vasculogenetic activity, significant mitigation of bradycardia in zebrafish // not the same structure as **388** // *
395 // N // fumiquinazoline Q // potent vasculogenetic activity, significant mitigation of bradycardia in zebrafish // * // *
396 // N // protuboxepin E // potent vasculogenetic activity, significant mitigation of bradycardia in zebrafish // * // *



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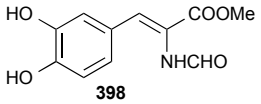

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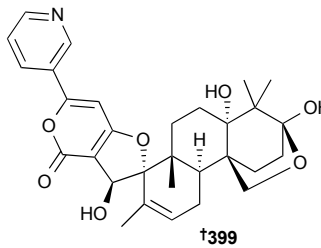
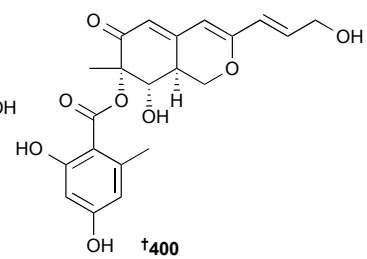
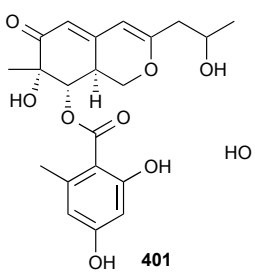


†**399**



†**400**



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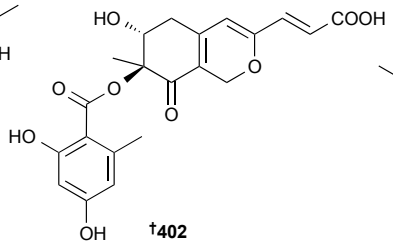
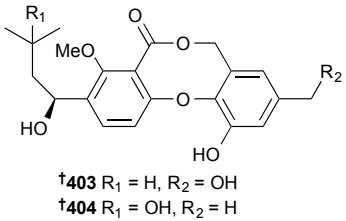


†**402**



†**403** R_1 = H, R_2 = OH
†**404** R_1 = OH, R_2 = H

256 Ascomycota *Penicillium oxalicum* // (sediment) Sanya, Hainan, China // New compound with DNA Topo I inhibitory activity purified from *Penicillium oxalicum* HSY05
397 // N // * // mod. inhib. topoisomerase I // * // *

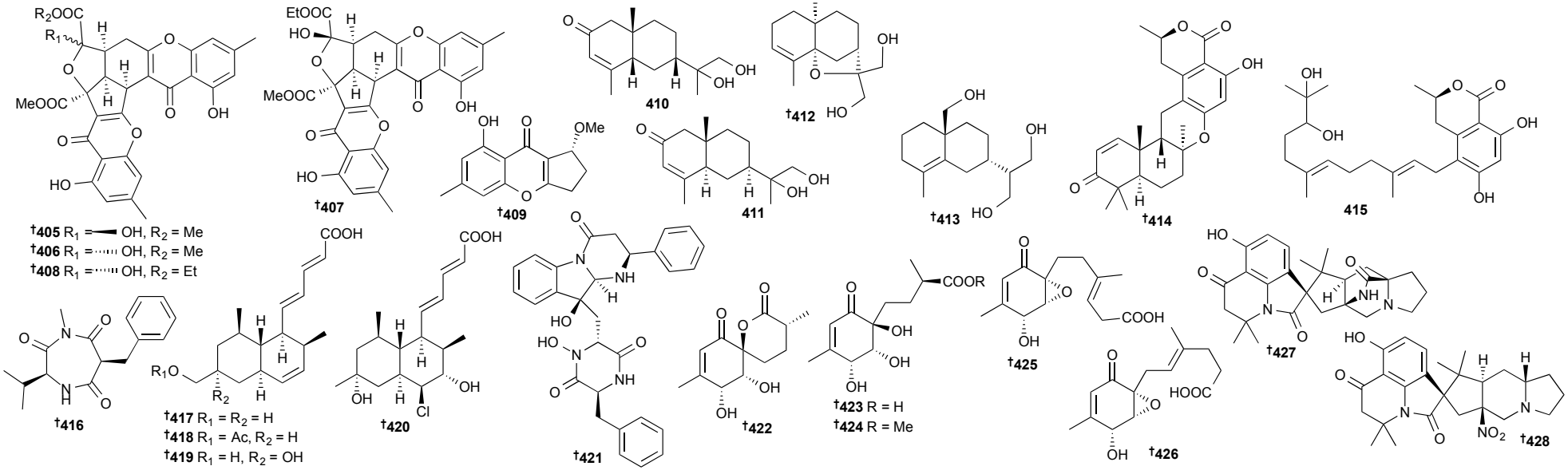
257 Ascomycota *Penicillium oxalicum* // (Chlorophyta, *Codium fragile*) Qingdao, China // A new phenolic enamide and a new meroterpenoid from marine alga-derived endophytic fungus *Penicillium oxalicum* EN-290
398 // N // * // potent AB vs *S. aureus*, inhib. HAB causing *Nitzschia closterium* // * // *
399 // N // 15-hydroxydecaturin A // inactive // * // *

258 Ascomycota *Penicillium pinophilum*, *Talaromyces pinophilus* // (unidentified gorgonian) Xisha Is., S. China Sea // Azaphilone and diphenyl ether derivatives from a gorgonian-derived strain of the fungus *Penicillium pinophilum*
400 // N // pinophilin D // inactive // * // *
401 // N // pinophilin E // inactive // * // *
402 // N // pinophilin F // inactive // same as pinazaphilone A in ref. **399** // *
403 // N // hydroxypenicillide // good inhib. of settlement of *B. amphitrite* larvae // * // *
404 // M // isopenicillide // good inhib. of settlement of *B. amphitrite* larvae // * // **s118**

260 Ascomycota *Penicillium purpurogenum* // (sediment) Lüjühe, Tianjin, China // Rare chromones from a fungal mutant of the marine-derived *Penicillium purpurogenum* G59
405 // N // epiremisporine B (major) // weak activity vs 4 HTCL // * // *
406 // N // epiremisporine B (minor) // weak activity vs 4 HTCL // * // *
407 // N // epiremisporine B1 (major) // weak activity vs 4 HTCL // * // *
408 // N // epiremisporine B1 (minor) // weak activity vs 4 HTCL // * // *
409 // N // isoconiochaetone C // weak activity vs 4 HTCL // * // *

261 Ascomycota *Penicillium thomii* // (seagrass, *Zostera marina*) Sea of Japan // New eudesmane sesquiterpenes from the marine-derived fungus *Penicillium thomii*
410 // N // thomimarine A // inhib. of NO production in LPS-induce murine macrophages // * // *
411 // N // thomimarine B // inhib. of NO production in LPS-induce murine macrophages // * // *
412 // N // thomimarine C // inactive // * // *

413 // N // thomimarine D // inhib. of NO production in LPS-induce murine macrophages // * // *



262 Ascomycota *P. verruculosum* // (Chordata, *Polycarpa aurata*) Manado, Indonesia // Verruculides A and B, new PTP 1B inhibs. from Indonesian ascidian-derived *P. verruculosum*
414 // N // verruculide A // good inhib. PTP1B // * // *
415 // N // verruculide B // weak inhib. PTP1B // * // *

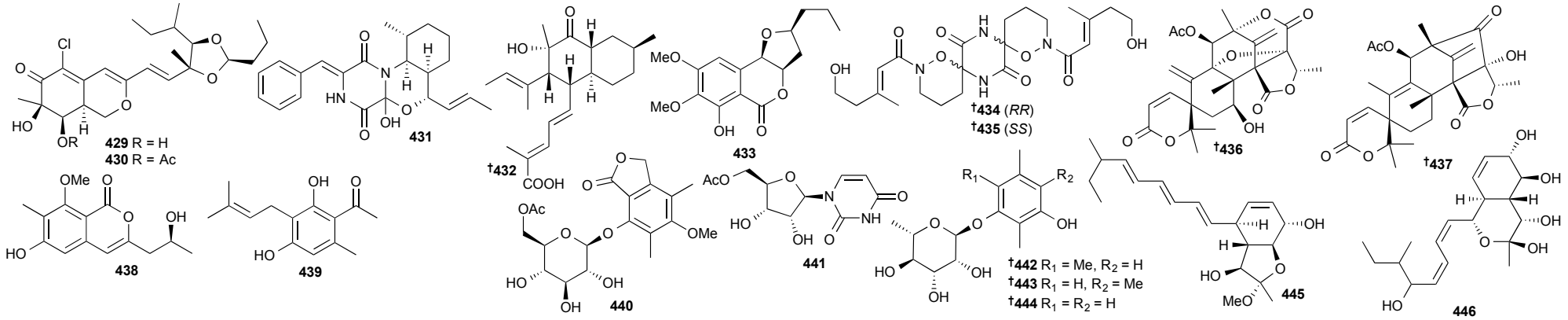
263 Ascomycota *Penicillium* sp. // (Chordata, *Didemnum* sp.) Suez Canal, Egypt // Ident. and bioact. of compounds from fungus *Penicillium* sp. CYE-87 isolated from a marine tunicate
416 // M // terretrione D // good antimigratory activity vs 1 HTCL, mod. inhib. of *C. albicans* // * // *

264 Ascomycota *Penicillium* sp. // (sediment) Bahia de Los Angeles, Mexico // Tanzawaic acids isolated from a marine-derived fungus of the genus *Penicillium* with cytotoxic activities
417 // N // tanzawaic acid M // weak activity vs 4 HTCL // * // *
418 // N // tanzawaic acid N // weak activity vs 4 HTCL // * // *
419 // N // tanzawaic acid O // weak activity vs 4 HTCL // * // *
420 // N // tanzawaic acid P // weak activity vs 4 HTCL // * // *

265 Ascomycota *Penicillium* sp. // (sediment) Haenam, S. Korea // Haenamindole, an unusual diketopiperazine derivative from a marine-derived *Penicillium* sp. KCB12F005
421 // N // haenamindole // inactive // * // *

266 Ascomycota *Penicillium* sp. // (sediment) China // Penicyclones A–E, antibacterial polyketides from the deep-sea-derived fungus *Penicillium* sp. F23-2
422 // N // penicyclone A // good AB vs *S. aureus* // * // *
423 // N // penicyclone B // good AB vs *S. aureus* // * // *
424 // N // penicyclone C // good AB vs *S. aureus* // * // *
425 // N // penicyclone D // good AB vs *S. aureus* // * // *
426 // N // penicyclone E // good AB vs *S. aureus* // * // *

267 Ascomycota *Penicillium* sp. // (unidentified bryozoan) Jeju Is., S. Korea // Cycloexpansamines A and B: spiroindolinone alkaloids from a marine isolate of *Penicillium* sp. (SF-5292)
427 // N // cycloexpansamine A // mod. inhib. PTP1B // * // *
428 // N // cycloexpansamine B // inactive // * // *



268 Ascomycota *Penicillium* sp. // (sediment) Anmyeon Is., S. Korea // Penidioxolanes A and B, 1,3-dioxolane containing azaphilone derivatives from marine-derived *Penicillium* sp.
429 // N // penidioxolane A // inactive // * // *
430 // N // penidioxolane B // inactive // * // *

269 Ascomycota *P. vinaceum* // (Porifera, *Hyrtios erectus*) Yanbu, Saudi Arabia // Penicillivinacine, antimigratory diketopiperazine alkaloid from marine-derived fungus *P. vinaceum*
431 // N // penicillivinacine // potent antimigratory activity vs 1 HTCL // * // *

272 Ascomycota *Penicillium* sp. // (Porifera, *Ircinia oros*) Kemer of Antalya, Turkey // A new fusarielin analogue from *Penicillium* sp. isolated from the Mediterranean sponge *Ircinia oros*
432 // N // fusarielin I // inactive // * // *
433 // M // monocerin // mod. activity vs L5178Y // * // **s119**

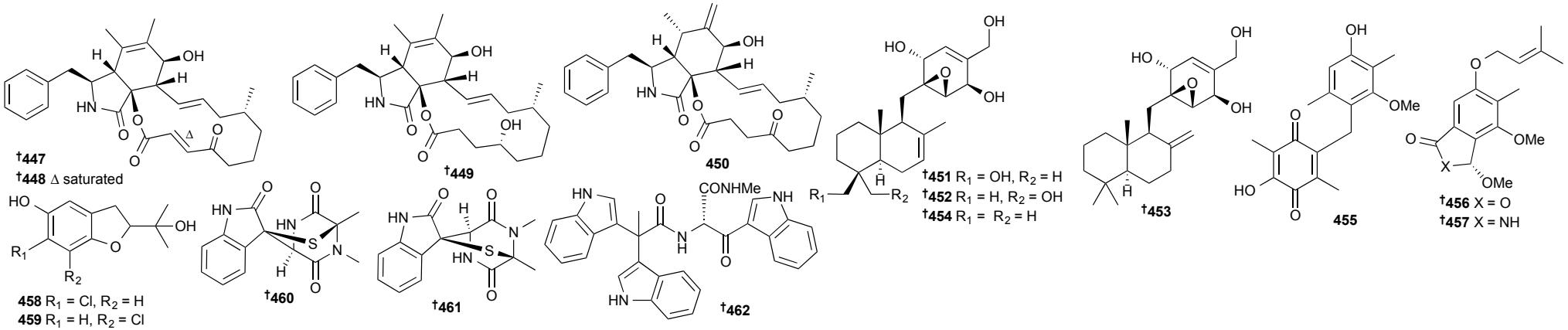
273 Ascomycota *Pestalotiopsis* sp. // (soft coral, *Sarcophyton* sp.) Yongxing Is., S. China Sea // (+)- and (−)-Pestaloxazine A, a pair of antiviral enantiomeric alkaloid dimers with a symmetric spiro[oxazinane-piperazinedione] skeleton from *Pestalotiopsis* sp.
434 // N // (+)-pestaloxazine A // potent AV vs EV71 virus // * // *
435 // N // (–)-pestaloxazine A // potent AV vs EV71 virus // * // *

274 Ascomycota *Pestalotiopsis* sp. // (seagrass, *Enhalus acoroides*) Thailand // Meroterpenoid, isocoumarin, and phenol derivatives from the seagrass-derived fungus *Pestalotiopsis* sp.
436 // N // 7-hydroxydehydroaustin // inactive // * // *
437 // N // 11β-acetoxyisoaustinone // inactive // * // *
438 // N // pestalotiorin // inactive // * // *
439 // N // pestalotionol // inactive // * // *

275 Ascomycota *Pestalotiopsis* sp. // (soft coral, *Sarcophyton* sp.) Yongxing Is., China // Pestalotiolide A, a new antiviral phthalide derivative from a soft coral-derived *Pestalotiopsis* sp.
440 // N // pestalotiolide A // sig. AV vs EV71 virus // * // *
441 // M // 5'-*O*-acetyl uridine // inactive // * // **s120**

277 Ascomycota *Pestalotiopsis* sp. // (Cnidarian, *Sarcophyton* sp.) Yongxing Is., S. China Sea // Pestarhamnoses A–C, rhamnosylated phenol derivs. from soft coral-derived fungus *Pestalotiopsis* sp.
442 // N // pestarhamnose A // weak AB vs large panel, weak activity vs 4 HTCL // * // *
443 // N // pestarhamnose B // weak AB vs large panel, weak activity vs 4 HTCL // * // *
444 // N // pestarhamnose C // weak AB vs large panel, weak activity vs 4 HTCL // * // *

280 Ascomycota *Phaeosphaeria spartinae* // (Rhodophyta, *Cerarium* sp.) Büsum, Germany // New bicyclo-spartinols from the marine-derived fungus *Phaeosphaeria spartinae*
445 // N // furanospartinol // inactive // * // *
446 // N // pyranospartinol // inactive // * // *

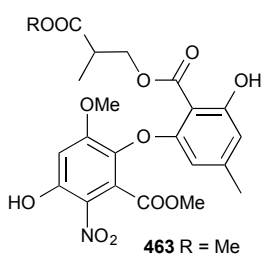


282 Ascomycota *Phoma* sp. // (jellyfish, *Nemopilema nomurai*) S. coast of S. Korea // Cytochalasin derivatives from a jellyfish-derived fungus *Phoma* sp.
447 // N // cytochalasin B3 // weak-mod. activity vs 3 HTCL // * // *
448 // N // cytochalasin B4 // weak-mod. activity vs 3 HTCL // * // *
449 // N // cytochalasin B5 // weak-mod. activity vs 3 HTCL // * // *
450 // M // cytochalasin B6 // weak-mod. activity vs 3 HTCL // * // **s121**

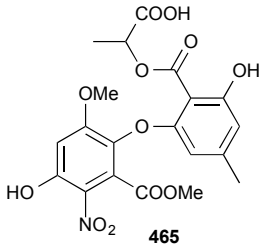
283 Ascomycota *Pleosporales* sp. // (Chlorophyta, Enteromorpha sp.) Hainan Province, China // Antimicrobial and anti-inflammatory compounds from a marine fungus *Pleosporales* sp.
451 // N // pleosporallin A // mod. inhib. of IL-6 production in murine macrophages // * // *
452 // N // pleosporallin B // mod. inhib. of IL-6 production in murine macrophages // * // *
453 // N // pleosporallin C // mod. inhib. of IL-6 production in murine macrophages // * // *
454 // N // pleosporallin D // mod. AB vs 1 strain // * // *
455 // N // pleosporallin E // mod. inhib. of *C. albicans* // * // *
456 // N // pleosporallin F // inactive // * // *
457 // N // pleosporallin G // inactive // * // *

284 Ascomycota *Pseudallescheria boydii* // (starfish, *Acanthaster planci*) National Coral Reef Reserve, Hainan, China // Two chlorinated benzofuran derivatives from the marine fungus *Pseudallescheria boydii*
458 // N // * // not tested // * // *
459 // N // * // not tested // * // *

285 Ascomycota *Pseudallescheria ellipsoidea* // (soft coral, *Lobophytum crassum*) National Coral Reef Reserve, Hainan, China // Pseudellones A–C, three alkaloids from the marine-derived fungus *Pseudallescheria ellipsoidea* F42–3
460 // N // pseudellone A // inactive // * // *
461 // N // pseudellone B // inactive // * // *
462 // N // pseudellone C // inactive // * // *



463 R = Me
464 R = H



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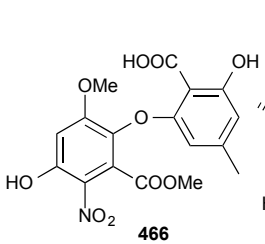

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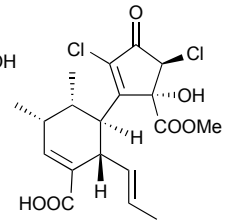
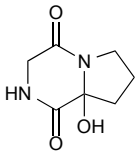


†**467**



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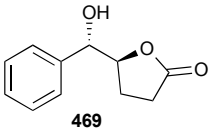

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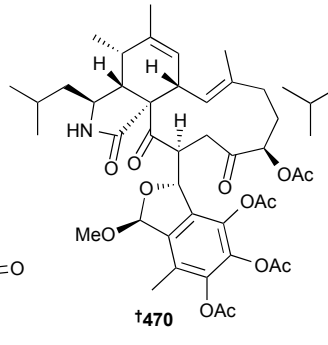

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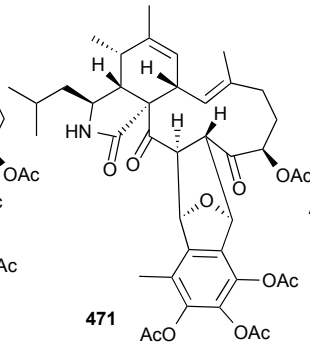

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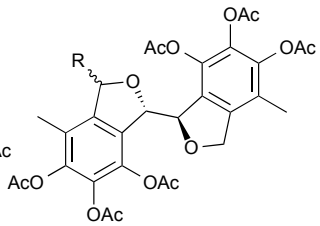


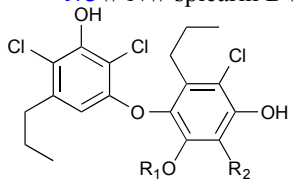
472 R = —OMe
473 R = ····OMe

286 Ascomycota *Pseudogymnoascus* sp. // (Porifera, *Hymeniacidon* sp.) Fildes Bay, King George Is. // 3-Nitroasterric acid derivatives from an Antarctic sponge-derived *Pseudogymnoascus* sp. fungus
463 // N // pseudogymnoascin A // inactive // * // *
464 // N // pseudogymnoascin B // inactive // * // *
465 // N // pseudogymnoascin C // inactive // * // *
466 // N // 3-nitroasterric acid // inactive // * // *

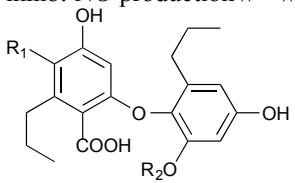
287 Ascomycota *Roussoella* sp. // no source given // Structure and biogenesis of roussoellatide, a dichlorinated polyketide from the marine-derived fungus *Roussoella* sp. DLM33
467 // N // roussoellatide // not tested // * // *

289 Ascomycota *Simplicillium* sp. // (Porifera, Hymeniacidon perleve) Dalian, Liaoning Province, China // A new minor diketopiperazine from the sponge-derived fungus *Simplicillium* sp.
468 // N // cyclo-(2-hydroxy-Pro-Gly) // not tested // * // *
469 // M // * // not tested // * // **s122**

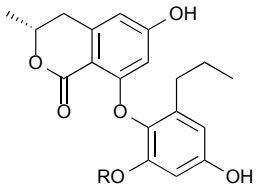
290 Ascomycota *Spicaria elegans*, *Mariannaea elegans* // (sediment) Jiaozhou Bay, China // Spicarins A–D from acetylated extract of fungus *Spicaria elegans* KLA03
470 // N // spicarin A // inactive // * // *
471 // N // spicarin B // inactive // * // *
472 // N // spicarin C // weak inhib. NO production // * // *
473 // N // spicarin D // weak inhib. NO production // * // *



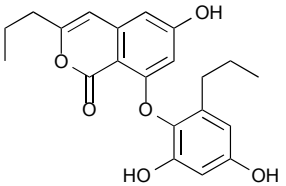
474 $R_1 = R_2 = H$
475 $R_1 = H$, $R_2 = Cl$
476 $R_1 = Me$, $R_2 = Cl$



477 $R_1 = R_2 = H$
478 $R_1 = H$, $R_2 = Me$
479 $R_1 = Cl$, $R_2 = H$



480 R = H
481 R = Me



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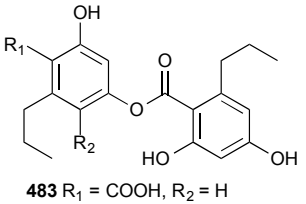
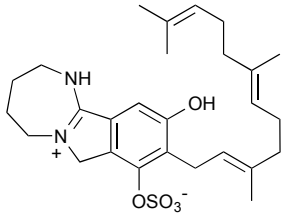


483 R_1 = COOH, R_2 = H
484 $R_1 = H$, R_2 = COOH

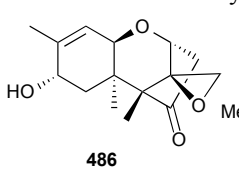


485

291 Ascomycota *Spiromastix* sp., *Spiromastigoides* sp. // (sediment) S. Atlantic Ocean // New polyphenols from a deep sea *Spiromastix* sp. fungus, and their antibacterial activities
474 // N // spiromastol A // potent AB vs 7 strains // * // *
475 // N // spiromastol B // potent AB vs 7 strains // * // *
476 // N // spiromastol C // potent AB vs 7 strains // * // *
477 // N // spiromastol D // inactive // * // *
478 // N // spiromastol E // inactive // * // *

479 // N // spiromastol F // inactive // * // *
480 // N // spiromastol G // inactive // * // *
481 // N // spiromastol H // inactive // * // *
482 // N // spiromastol I // mod. AB vs 7 strains // * // *
483 // N // spiromastol J // mod. AB vs 7 strains // * // *
484 // N // spiromastol K // mod. AB vs 7 strains // * // *

292 Ascomycota *Stachybotrys chartarum* // (Porifera, *Xestospongia testudinaria*) Xisha Is., China // Stachybotrin G, a sulfate meroterpenoid from a sponge derived fungus *Stachybotrys chartarum* MXH-X73
485 // N // stachybotrin G // inactive // * // *



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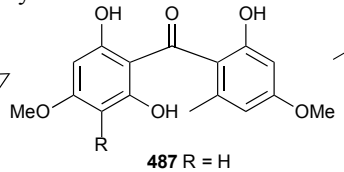
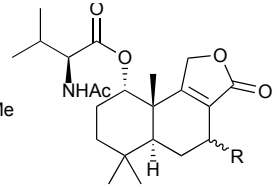
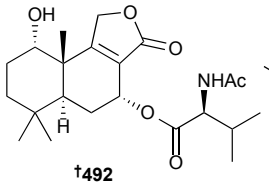


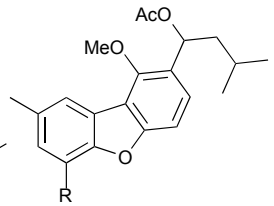
487 R = H
488 R = Cl



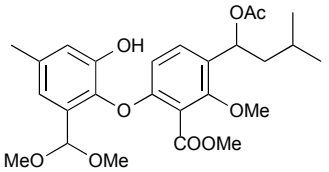
†**489** R = ····· Cl
†**490** R = ····· OH
†**491** R = ▬ OH



†**492**



493 R = CHO
494 R = $CH(OMe)_2$



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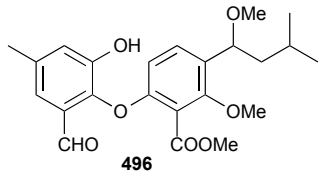
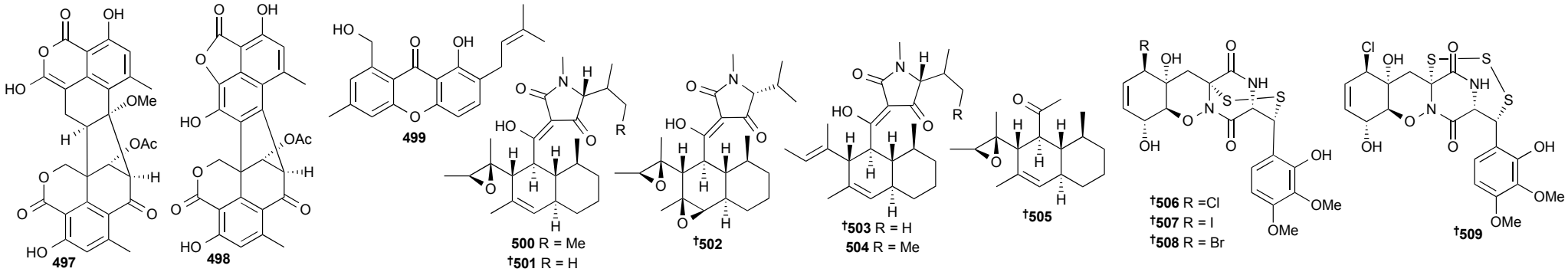


496

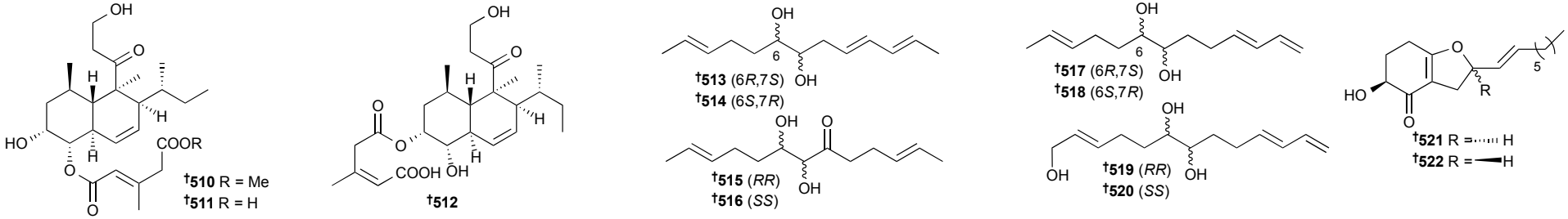
293 Ascomycota *Stachybotrys* sp. // (unspecified sponge) Xisha Is., China // Sesquiterpenoids and xanthones derivatives produced by sponge-derived fungus *Stachybotry* sp. HH1 ZSDS1F1-2
486 // N // stachybotrichodermone A // inactive // * // *
487 // N // stachybogrisephenone A // mod. COX-2 inhib. // * // *
488 // N // stachybogrisephenone B // mod. COX-2 inhib., mod. AV vs EV71 virus // * // *
294 Ascomycota *Talaromyces minioluteus* // (unidentified sponge) Pilae Bay, Phi Phi Is., Thailand // Drimane sesquiterpene-conjugated amino acids from a marine isolate of the fungus *Talaromyces minioluteus* (*Penicillium Minioluteum*)
489 // N // minioluteumide A // weak activity vs HepG2 // * // *
490 // N // minioluteumide B // inactive // * // *
491 // N // minioluteumide C // inactive // * // *
492 // N // minioluteumide D // weak activity vs HepG2 // * // *
296 Ascomycota *Talaromyces* sp. // (gorgonian, *Subergorgia suberosa*) Weizhou coral reef, S. China Sea // Bioactive diphenyl ether derivatives from a gorgonian-derived fungus *Talaromyces* sp.
493 // N // talaromycin A // inactive // * // *
494 // N // talaromycin B // inactive // * // *
495 // N // talaromycin C // potent inhib. of settlement of *B. amphitrite* larvae // * // *
496 // M // tenellic acid A methyl ester // potent activity vs 5 HTCL // * // **s123**
297 Ascomycota *Talaromyces* sp. // (Porifera, *Axinella verrucosa*) Punta di Fetovaia, Elba, Italy // Acetylcholinesterase inhibitors from a marine fungus *Talaromyces* sp. strain LF458
497 // N // talaromycesone A // mod. AB vs *S. aureus*, potent AchE inhib. // * // *
498 // N // talaromycesone B // inactive // * // *
499 // N // talaroxanthenone // mod. AB vs *S. aureus*, potent AchE inhib., good inhib. PDE-4B2 // * // *



298 Ascomycota *Trichobotrys effusa* // (sediment) S. China Sea // Cytotoxic and antiviral tetramic acid derivatives from the deep-sea-derived fungus *Trichobotrys effuse* DFFSCS021
500 // N // trichobotrysin A // mod., selective activity vs KG-1a , mod. AV vs HSV-1 // * // *
501 // N // trichobotrysin B // mod., selective activity vs KG-1a , mod. AV vs HSV-2 // * // *
502 // N // trichobotrysin C // inactive // * // *
503 // N // trichobotrysin D // mod., selective activity vs KG-1a , mod. AV vs HSV-1 // * // *
504 // N // trichobotrysin E // inactive // * // *
505 // N // trichobotrysin F // inactive // * // *

303 Ascomycota *Trichoderma* sp. // (unidentified red alga) Palau // Induced production of halogenated epidithiodiketopiperazines by a marine-derived *Trichoderma cf. brevicompactum* with sodium halides
506 // M // DC1149B // not tested // * // **s124**
507 // N // iododithiobrevamide // not tested // * // *
508 // M // DC1149R // not tested // * // **s124**

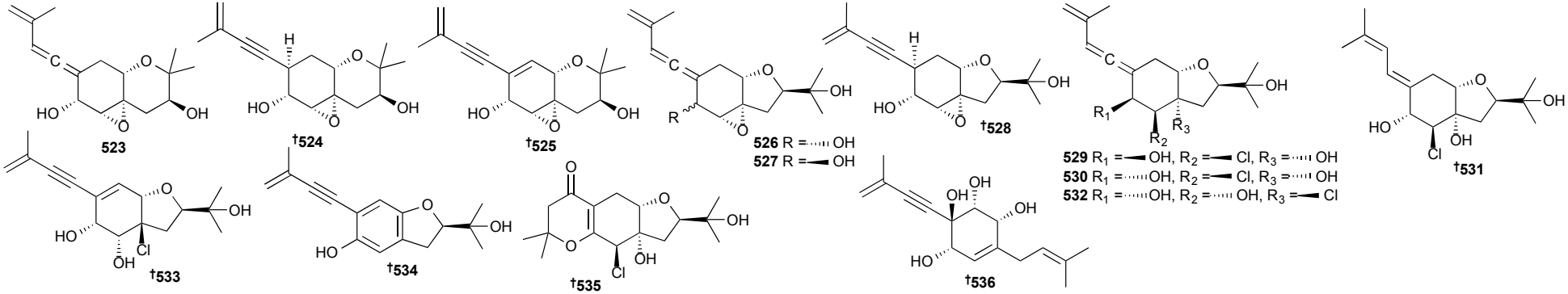
304 Ascomycota *Trichoderma brevicompactum* // (unidentified red alga) Palau // Induced production of a new unprecedented epitrithiodiketopiperazine, chlorotrithiobrevamide, by a culture of the marine-derived *Trichoderma cf. brevicompactum* with dimethyl sulfoxide
509 // N // chlorotrithiobrevamide // not tested // * // *



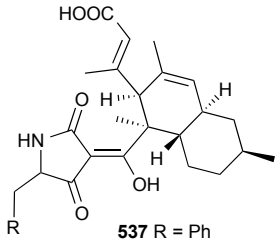
305 Ascomycota *Trichoderma harzianum* // (Porifera, *Halichondria okadai*) Osaka Bay, Japan // Determination of the chemical structures of tandyukisins B–D, isolated from a marine sponge-derived fungus
510 // N // tandyukisin B // very weak activity vs 1 HTCL // * // *
511 // N // tandyukisin C // very weak activity vs 1 HTCL // * // *
512 // N // tandyukisin D // very weak activity vs 1 HTCL // * // *

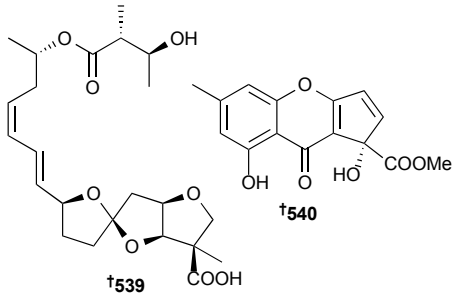
306 Ascomycota *Trichoderma harzianum* // (Porifera, *Petrospongia nigra*) S. China Sea // New C13 lipids from the marine-derived fungus *Trichoderma harzianum*
513 // N // harzianumol A // inactive // * // *
514 // N // harzianumol B // inactive // * // *
515 // N // harzianumol C // inactive // * // *
516 // N // harzianumol D // inactive // * // *
517 // N // harzianumol E // inactive // * // *
518 // N // harzianumol F // inactive // * // *
519 // N // harzianumol G // inactive // * // *
520 // N // harzianumol H // inactive // * // *

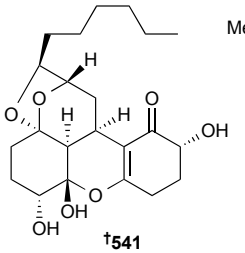
307 Ascomycota *Trichoderma* sp. // (seawater) Aomori, Japan // Trichoketides A and B, two new protein tyrosine phosphatase 1B inhibitors from the marine-derived fungus *Trichoderma* sp.
521 // N // trichoketide A // mod. inhib. of PTP1B // * // *
522 // N // trichoketide B // mod. inhib. of PTP1B // * // *

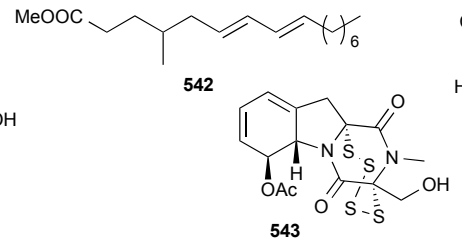


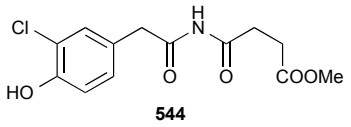
308 Ascomycota *Truncatella angustata* // (Porifera, *Amphimedon* sp.) Yongxing Is., China // Truncateols A–N, new isoprenylated cyclohexanols from the sponge-associated fungus *Truncatella angustata* with anti-H1N1 virus activities
523 // N // truncateol A // inactive // * // *
524 // N // truncateol B // inactive // * // *
525 // N // truncateol C // mod. inhib. of H1N1 virus // * // *
526 // N // truncateol D // inactive // * // *
527 // N // truncateol E // mod. inhib. of H1N1 virus // * // *
528 // N // truncateol F // inactive // * // *
529 // N // truncateol G // inactive // * // *
530 // N // truncateol H // inactive // * // *
531 // N // truncateol I // inactive // * // *
532 // N // truncateol J // inactive // * // *
533 // N // truncateol K // inactive // * // *
534 // N // truncateol L // inactive // * // *
535 // N // truncateol M // potent inhib. of H1N1 virus // * // *
536 // N // truncateol N // inactive // * // *

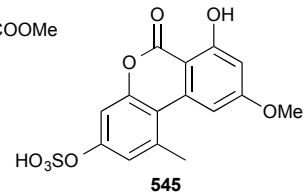












310 Ascomycota // (Porifera, *Halichondria panicea*) Kiel Fjord, Baltic Sea, Germany // Lindgomycin, an unusual antibiotic polyketide from a marine fungus of the Lindgomycetaceae
537 // N // lindgomycin // mod. activity vs 6 bacteria and 2 fungal strains // * // *
538 // M // ascosetin // mod. activity vs 6 bacteria and 2 fungal strains // * // **s125**

312 Ascomycota *Ascochyta salicorniae*, *Stagonosporopsis salicorniae* // * // Total synthesis of ascospiroketal A through a AgI -promoted cyclization cascade
539 // R // ascospiroketal A // * // * // **s126**

315 Ascomycota *Remispora maritima* // * // Absolute configuration of remisporines A & B
540 // R // remisporine A // * // * // **s127**

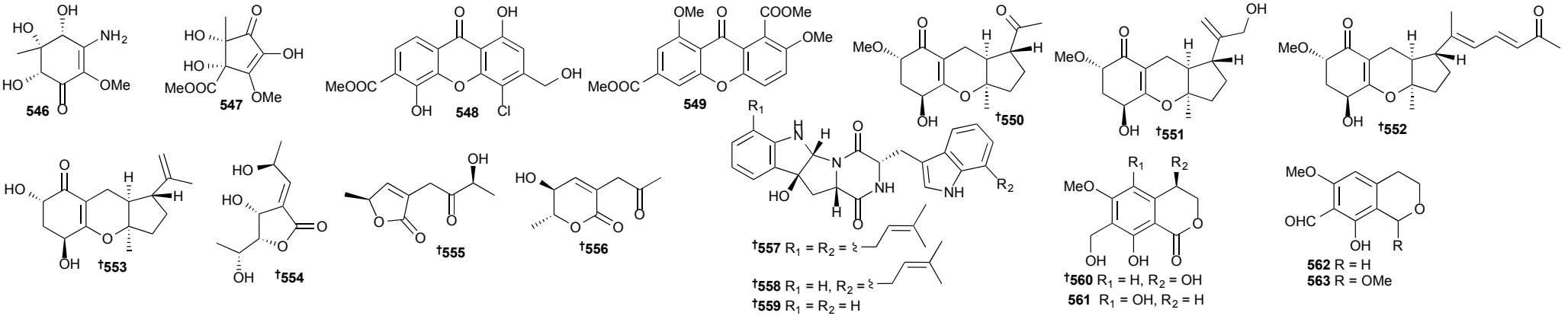
317 Ascomycota *Trichoderma reesei* // * // The revised structure of trichodermatide A
541 // R // trichodermatide A // * // * // **s128**

321 Ascomycota *Clonostachys rosea* // (sediment) Loire estuary, France // The marine-derived fungus *Clonostachys rosea*, source of a rare conjugated 4-Me-6E,8E-hexadecadienoic acid reducing viability of MCF-7 breast cancer cells and gene expression of lipogenic enzymes
542 // M // * // mod. inhib. of MCF-7 // * // **s129**

322 Ascomycota *Dichotomomyces cejpii* // Pecém's offshore port, Ceará, Brazil // Bioprospection of cytotoxic compounds in fungal strains recovered from sediments of the Brazilian coast
543 // M // acetylgliotoxin G // * // * // **s130**

324 Ascomycota *Penicillium copticola* // (marine foam) Iriomote Is., Okinawa, Japan // Penicillimide, an open-chain hemisuccinimide from Okinawan marine-derived *Penicillium copticola*
544 // M // penicillimide // inactive // * // **s131**

326 Ascomycota *Alternaria alternata* // (soft coral, *Litophyton crustosum*) Abo El-Darag, Egypt // Alternariol derivatives from *Alternaria alternata*, an endophytic fungus residing in Red Sea soft coral, inhibit HCV NS3/4A protease
545 // M // alternariol-9-methyl ether-3-sulfate // * // * // **s132**



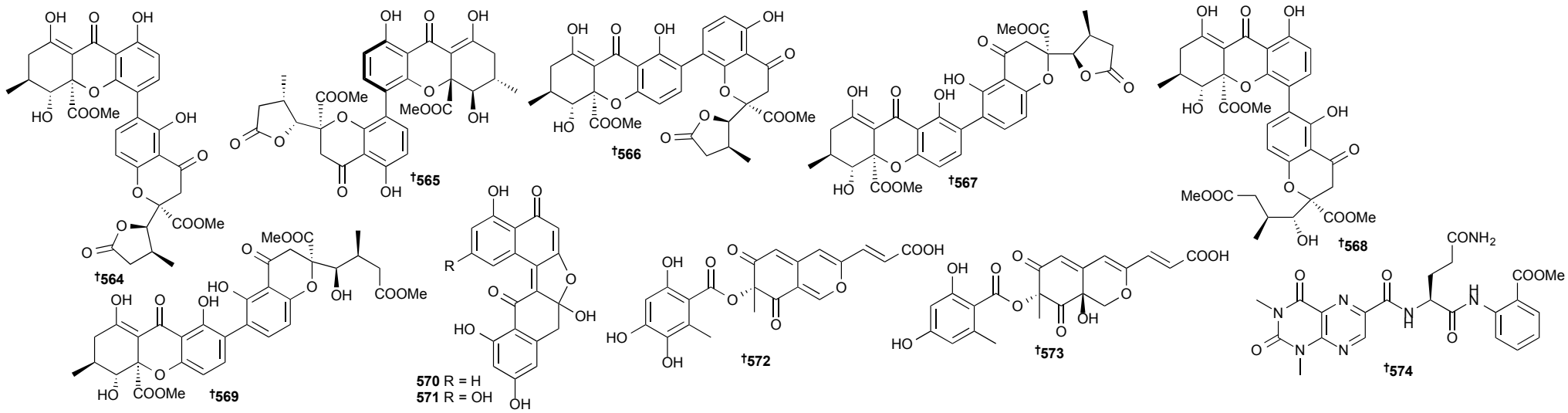
364 Ascomycota *Alternaria* sp. // (Tracheophyta, Myoporum bontioides, root) Leizhou Peninsula, Guangdong Province, China // Identification and bioactivity of compounds from the mangrove endophytic fungus *Alternaria* sp.
546 // N // * // potent radical scavenger (ABTS) // * // *
547 // N // * // potent radical scavenger (ABTS), good AF activity vs 1 strain // * // *
548 // N // * // good AF activity vs 2 strains // * // *
549 // N // * // not tested // * // *

365 Ascomycota *Aspergillus flavipes* // (Tracheophyta, *Acanthus ilicifolius*, leaves) Daya Bay, Shenzhen, China // New meroterpenoids from the endophytic fungus *Aspergillus flavipes* AIL8 derived from the mangrove plant *Acanthus ilicifolius*
550 // N // guignardone J // inactive // * // *
551 // N // guignardone K // inactive // * // *
552 // N // guignardone L // inactive // * // *
553 // N // guignardone M // inactive // * // *

366 Ascomycota *Aspergillus ochraceus* // (Tracheophyta, *Bruguiera gymnorrhiza*, soil) Hainan Is., China // Polyketides from the marine mangrove-derived fungus *Aspergillus ochraceus* MA-15 and their activity against aquatic pathogenic bacteria
554 // N // asperochrin A // mod. AB vs 3 aquatic strains // * // *
555 // N // asperochrin B // inactive // * // *
556 // N // asperochrin C // inactive // * // *

367 Ascomycota *Aspergillus taichungensis* // (Tracheophyta, *Acrostichum aureum*, soil) // Okaramines S–U, three new indole diketopiperazine alkaloids from *Aspergillus taichungensis*
557 // N // okaramine S // very good, selective activity vs HL-60 // * // *
558 // N // okaramine T // inactive // * // *
559 // N // okaramine U // inactive // * // *

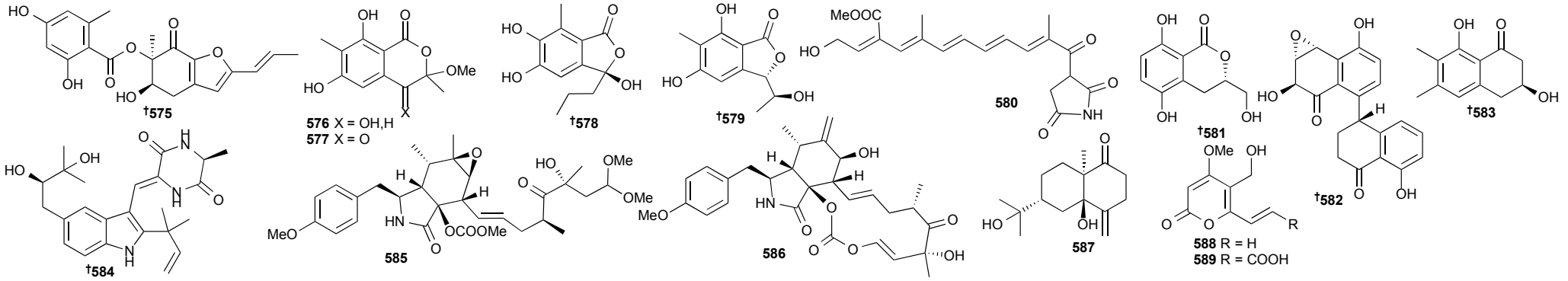
368 Ascomycota *Aspergillus ustus* // * // New isochromane derivatives from the mangrove fungus *Aspergillus ustus* 094102.
560 // N // * // mod. α-glucosidase inhib. // * // *
561 // N // * // mod. radical scavenging activity (DPPH) // * // *
562 // N // * // inactive // * // *
563 // N // * // inactive // * // *



369 Ascomycota *Aspergillus versicolor* // (unspecified mangrove, soil) Guangzhou, China // Versixanthones A–F, cytotoxic xanthone–chromanone dimers from the marine-derived fungus *Aspergillus versicolor* HDN1009
564 // N // versixanthone A // mod. but selective activity vs 2 HTCL // * // *
565 // N // versixanthone B // mod. but selective activity vs 2 HTCL // * // *
566 // N // versixanthone C // mod. but selective activity vs 2 HTCL // * // *
567 // N // versixanthone D // good activity vs 7 HTCL // * // *
568 // N // versixanthone E // good activity vs 7 HTCL, topoisomerase I inhib. // * // *
569 // N // versixanthone F // good activity vs 7 HTCL // * // *

370 Ascomycota *Aspergillus* sp. // (Tracheophyta, *Sonneratia apetala*, leaves) Hainan Is., China // Asperlones A and B, dinaphthalenone derivatives from a mangrove endophytic fungus *Aspergillus* sp. 16-5C
570 // N // (±)-asperlone A // potent inhib. of *M. tuberculosis* protein tyrosine phosphatase (MptpB) // * // *
571 // N // (±)-asperlone B // potent inhib. of *M. tuberculosis* PTPB1 // * // *
572 // N // 6"-hydroxy-(*R*)-mitorubrinic acid // inactive // * // *
573 // N // purpurquinone D // not tested // * // *

371 Ascomycota *Aspergillus* sp. // (Tracheophyta, *Bruguiera sexangula*) S. China Sea // Structure and absolute configuration of aspergilumamide A, a novel lumazine peptide from the mangrove-derived fungus *Aspergillus* sp.
574 // N // aspergilumamide A // inactive // * // *



373 Ascomycota *Aspergillus* sp. // (Tracheophyta, *Sonneratia apetala*, leaves) Dongzhaigang, Hainan Is., China // Bioactive metabolites from mangrove endophytic fungus *Aspergillus* sp.
575 // N // aspergifuranone // very good inhib. of α-glucosidase // * // *
576 // N // * // good inhib. of α-glucosidase // * // *
577 // N // * // inactive // * // *
578 // N // (*R*)-3-demethylpurpurester A // inactive // * // *
579 // M // pestaphthalide A // good inhib. of α-glucosidase // * // **s133**

374 Ascomycota *Aspergillus* sp. // (unspecified mangrove, soil) Wenchang, China // Bioactive natural products of *Aspergillus* sp. OUCMDZ-1914, an aciduric fungus from the mangrove soils
580 // N // * // inactive // * // *

375 Ascomycota *Botryosphaeria* sp. // (Tracheophyta, *Kandelia candel*, fruit) Daya Bay, Shenzhen, China // Botryoisocoumarin A, a new COX-2 inhibitor from the mangrove *Kandelia candel* endophytic fungus *Botryosphaeria* sp. KcF6
581 // N // botryoisocoumarin A // sig. COX-2 inhib. // * // *

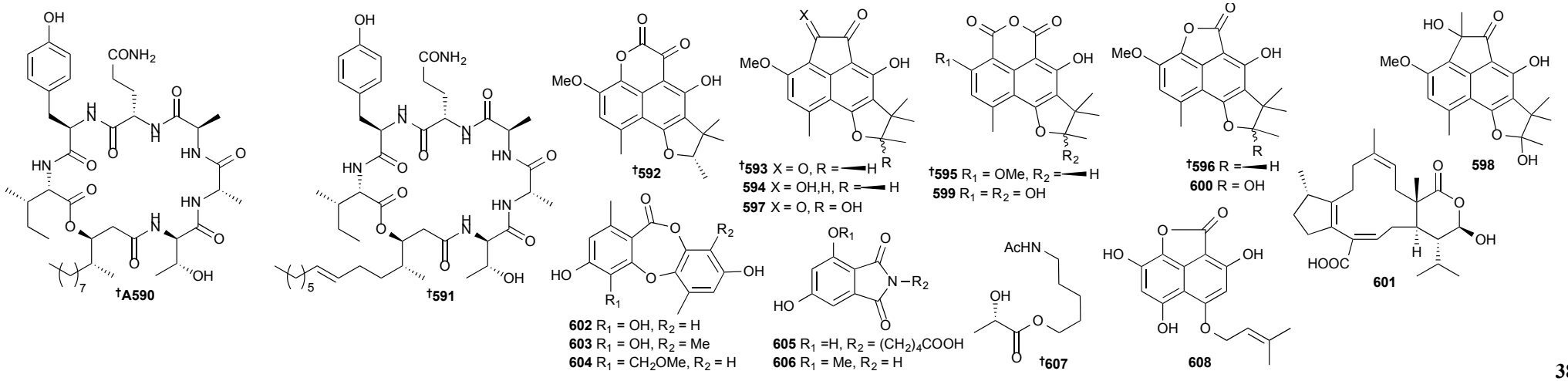
376 Ascomycota *Cladosporium* sp. // (Tracheophyta, *Kandelia candel*, flower) Daya Bay, Shenzhen city, Guangdong Province, China // Cladosporone A, a new dimeric tetralone from fungus *Cladosporium* sp. KcFL6' derived of mangrove plant *Kandelia candel*
582 // N // cladosporone A // mod. cytotox. vs 10 HTCL and COX-2 inhib. // * // *

377 Ascomycota *Daldinia eschscholtzii* // (Tracheophyta, *Bruguiera gymnorrhiza*, leaf) Suratthani, Thailand // A new hydronaphthalenone from the mangrove-derived *Daldinia eschscholtzii*
583 // N // * // very weak AB vs 2 strains // * // *

378 Ascomycota *Eurotium rubrum*, *Aspergillus ruber* // (unspecified mangrove soil) Andaman Sea coastline, Thailand // Rubrumazines A–C, indolediketopiperazines of the isoechinulin class from *Eurotium rubrum* MA-150, a fungus obtained from marine mangrove-derived rhizospheric soil
310 // N // rubrumazine A // mod. brine shrimp toxicity // same as rubrumline I **310** in ref. **299** // *
309 // N // rubrumazine B // very good brine shrimp toxicity // same as rubrumline H **309** in ref. **299** // *
584 // N // rubrumazine C // mod. brine shrimp toxicity // * // *

380 Ascomycota *Eutypella scoparia* // (unspecified mangrove, sediment) Jimei, Fujian, China // Cytochalasans and sesquiterpenes from *Eutypella scoparia* 1-15
585 // N // scoparasin C // inactive // * // *
586 // M // scoparasin D // good cytotox. vs 4 HTCL // * // **s134**
587 // N // scopararane C // inactive // * // *

382 Ascomycota *Fusarium* sp. // (Tracheophyta, *Rhizophora mucronata*) Muara Angke, Indonesia // A new α-pyrone metabolite from a mangrove plant endophytic fungus, *Fusarium* sp.
588 // M // cladobotrin V // inactive // * // **s135**
589 // N // * // inhib. of Ca^{2+} signal transduction // * // *



38

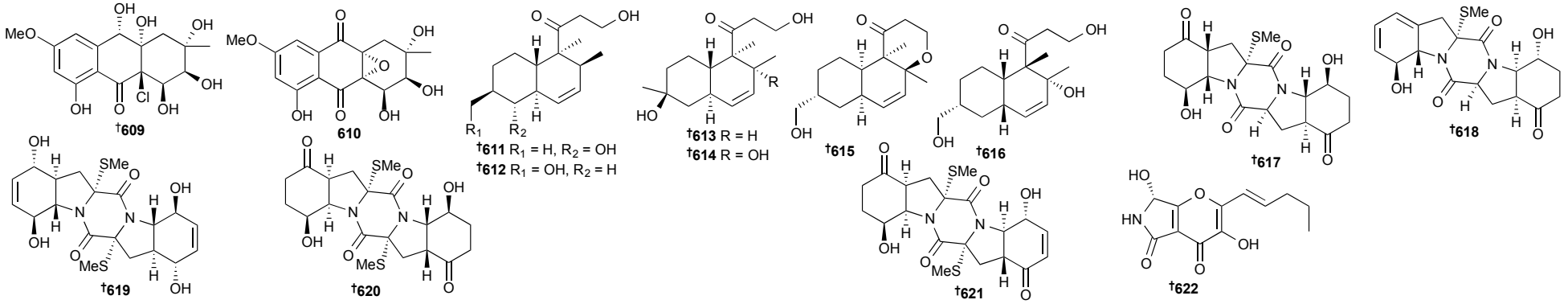
3 Ascomycota *Fusarium* sp. // (Tracheophyta, *Ceriops tagal*, stem) Hainan Is., China // Two new cyclic depsipeptides from the endophytic fungus *Fusarium* sp.
590 // N // W493 C // inactive // * // *
591 // N // W493 D // inactive // * // *

384 Ascomycota *Lophiostoma bipolare*, *Massarina bipolaris* // (unspecified mangrove, wood) Haad Wanakorn National Park, Thailand // Phenalenone derivatives and the unusual tricyclic sesterterpene acid from the marine fungus *Lophiostoma bipolare* BCC25910
592 // N // (–)-bipolaride A // weak AB vs *B. cereus*, very weak activity vs 2 HTCL // * // *
593 // N // (–)-bipolaride B // very weak activity vs 4 HTCL // * // *
594 // N // bipolaride C // weak AB vs *B. cereus*, very weak activity vs 4 HTCL // * // *
595 // N // (–)-bipolaride D // not tested // * // *
596 // N // (–)-bipolaride E // very weak activity vs 4 HTCL // * // *
597 // N // bipolarol A // very weak activity vs 1 HTCL // * // *
598 // N // bipolarol B // very weak activity vs 4 HTCL // * // *
599 // N // bipolarol C // very weak activity vs 2 HTCL // * // *
600 // N // bipolarol D // very weak activity vs 1 HTCL // * // *
601 // N // bipolarenic acid // inactive // * // *

385 Ascomycota *Meyerozyma guilliermondii* // (Tracheophyta, *Kandelia obovata*, roots) Huizhou Mangrove Nature Reserve, Guangdong Province, China // New depsidones and isoindolinones from the mangrove endophytic fungus *Meyerozyma guilliermondii* isolated from the South China Sea
602 // N // botryorhodine E // strong α-glucosidase inhib. // * // *
603 // N // botryorhodine F // strong α-glucosidase inhib. // * // *
604 // N // botryorhodine G // strong α-glucosidase inhib. // * // *
605 // N // meyeroguilline A // good α-glucosidase inhib. // * // *
606 // N // meyeroguilline B // not tested // * // *

386 Ascomycota *Nigrospora sphaerica*, *Khuskia oryzae* // (Tracheophyta, *Xylocarpus granatum*) Huanghai, China // Two new secondary metabolites from the marine-derived fungus *Nigrospora sphaerica*
607 // N // * // mod. activity vs 2 HTCL // * // *

608 // N // * // inactive // * // *

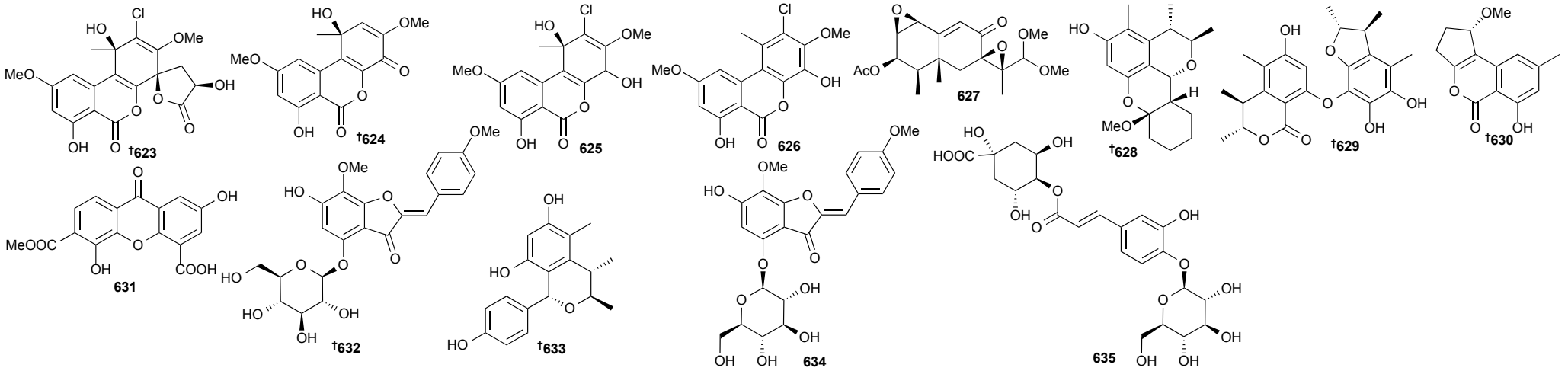


387 Ascomycota *Paradictyoarthrinium diffractum* // (unspecified mangrove, wood) Laem Son National Park, Ranong Province, Thailand // Cytotoxic hydroanthraquinones from the mangrove-derived fungus *Paradictyoarthrinium diffractum* BCC 8704
609 // N // paradictyoarthrin A // weak activity vs 4 HTCL // * // *
610 // N // paradictyoarthrin B // mod. activity vs 4 HTCL // * // *

388 Ascomycota *Penicillium aurantiogriseum* // (Tracheophyta, *Hibiscus tiliaceus*, bark) Qi'ao Mangrove Nature Reserve, Guangdong Province, China // Six new polyketide decalin compounds from mangrove endophytic fungus *Penicillium aurantiogriseum* 328#
611 // N // peaurantiogriseol A // weak inhib. of human aldose reductase // * // *
612 // N // peaurantiogriseol B // weak inhib. of human aldose reductase // * // *
613 // N // peaurantiogriseol C // weak inhib. of human aldose reductase // * // *
614 // N // peaurantiogriseol D // weak inhib. of human aldose reductase // * // *
615 // N // peaurantiogriseol E // weak inhib. of human aldose reductase // * // *
616 // N // peaurantiogriseol F // weak inhib. of human aldose reductase // * // *

389 Ascomycota *Penicillium brocae* // (Tracheophyta, *Avicenna marina*) Hainan Is., China // Penicibrocazines A–E, five new sulfide diketopiperazines from the marine-derived endophytic fungus *Penicillium brocae*
617 // N // penicibrocazine A // inactive // * // *
618 // N // penicibrocazine B // weak AB vs 2 strains // * // *
619 // N // penicibrocazine C // good AB vs 3 strains // * // *
620 // N // penicibrocazine D // mod. AB vs 2 strains // * // *
621 // N // penicibrocazine E // good AB vs 2 strains // * // *

390 Ascomycota *Penicillium brocae* // (Tracheophyta, *Avicenna marina*) Hainan Is., China // Polyoxygenated dihydropyrano[2,3-c]pyrrole-4,5-dione derivatives from the marine mangrove-derived endophytic fungus *Penicillium brocae* MA-231 and their antimicrobial activity
622 // N // pyranonigrin F // good AB vs 5 strains // * // *

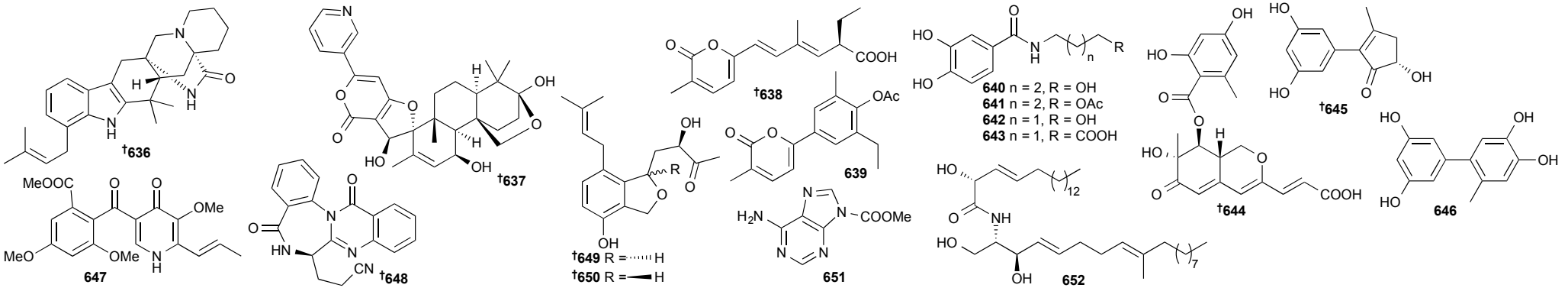


392 Ascomycota *Penicillium chermesinum* // (Tracheophyta, *Heritiera littoralis*, root) Samut Sakhon Province, Thailand // Cytotoxic metabolites from the endophytic fungus *Penicillium chermesinum*: discovery of a cysteine-targeted Michael acceptor as a pharmacophore for fragment-based drug discovery, bioconjugation and click reactions
623 // N // penicilliumolide A // inactive // * // *
624 // N // penicilliumolide B // inactive // * // *
625 // N // penicilliumolide C // inactive // * // *
626 // M // penicilliumolide D // inactive // * // **s136**
627 // N // * // inactive // * // *

393 Ascomycota *Penicillium chrysogenum* // (Tracheophyta, *Acanthus ilicifolius*, soil) unspecified location // Penicitols A–C and penixanacid A from the mangrove-derived *Penicillium chrysogenum* HDN11-24
628 // N // penicitol A // mod. activity vs 4 HTCL // * // *
629 // N // penicitol B // mod. activity vs 4 HTCL // * // *
630 // N // penicitol C // weak activity vs 4 HTCL // * // *
631 // N // penixanacid A // weak activity vs 4 HTCL // * // *

394 Ascomycota *Penicillium citrinum* // (Tracheophyta, *Bruguiera gymnorrhiza*) Yunxiao county, Fujian Province, China // Neuroprotective metabolites from the endophytic fungus *Penicillium citrinum* of the mangrove *Bruguiera gymnorrhiza*
632 // N // (*Z*)-7,4'-dimethoxy-6-hydroxyl-auraone-4-*O*-β-glucopyranoside // potent neuroprotective activity in PC12 cells // * // *
633 // N // * // weak neuroprotective activity in PC12 cells // * // *

395 Ascomycota *Penicillium citrinum* // (Tracheophyta, *Avicenna marina*) Zhangpu county, Fujian Province, China // Chemoreversal metabolites from the endophytic fungus *Penicillium citrinum* isolated from a mangrove *Avicennia marina*
634 // N // (*Z*)-7,4'-dimethoxy-6-hydroxyaurone-4-*O*-β-glucopyranoside // weak chemoreversal on KBvin // * // *
635 // N // (–)-4-*O*-(4-*O*-β-D-glucopyranosylcaffeoyl)quinic acid // potent chemoreversal on KBvin , inhib. of P-gp efflux // * // *



396 Ascomycota *Penicillium oxalicum* // (Tracheophyta, *Rhizophora stylosa*, leaves) Hainan Is., China // Two new alkaloids from *Penicillium oxalicum* EN-201, an endophytic fungus derived from the marine mangrove plant *Rhizophora stylosa*
636 // N // penioxamide A // // // *
637 // N // 18-hydroxydecaturin B // potent cytotox. vs brine shrimp // * // *

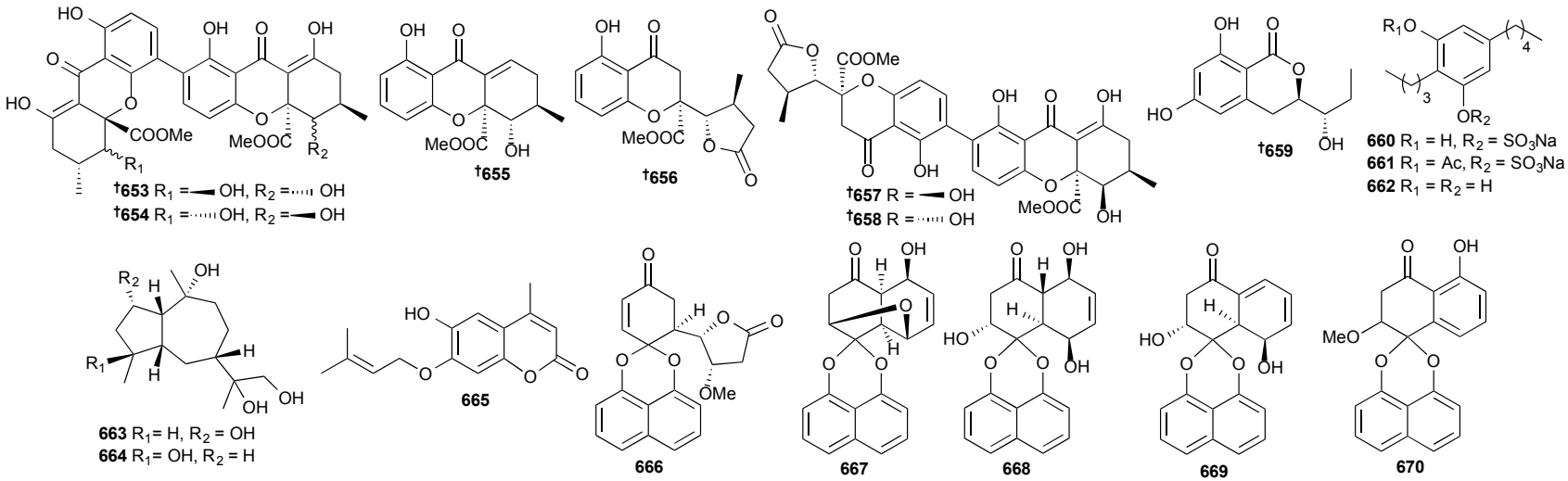
397 Ascomycota *Penicillium solitum* // (Tracheophyta, *Rhizophora stylosa*, soil) unspecif. location // Penipyrols A–B and peniamidones A–D from the mangrove derived *Penicillium solitum*
638 // N // penipyrol A // good radical scavenging activity (DPPH) // * // *
639 // N // penipyrol B // good radical scavenging activity (DPPH) // * // *
640 // N // peniamidone A // good radical scavenging activity (DPPH) // * // *
641 // N // peniamidone B // good radical scavenging activity (DPPH) // * // *
642 // M // peniamidone C // good radical scavenging activity (DPPH) // * // **s137**
643 // M // peniamidone D // good radical scavenging activity (DPPH) // * // **s137**

399 Ascomycota *Penicillium* sp. // (Tracheophyta, *Cerbera manghas*, branch) Dongzhaigang Mangrove National Nature Reserve, Hainan Is., China // Polyketides with α-glucosidase inhibitory activity from a mangrove endophytic fungus, *Penicillium* sp. HN29-3B1
644 // N // pinazaphilone B // mod. α -glucosidase inhib. // * // *
645 // N // * // inactive // * // *
646 // N // * // mod. α -glucosidase inhib. // * // *
647 // N // penicidone D // inactive // * // *

400 Ascomycota *Penicillium* sp. // (Tracheophyta, Acanthus ilicifolius) Haikou city, Hainan Province, China // A new terminal cyano group-containing benzodiazepine alkaloid from the mangrove endophytic fungus *Penicillium* sp. .
648 // N // * // inactive // * // *

401 Ascomycota *Pestalotiopsis vaccinii* // (Tracheophyta, *Kandelia candel*, branch) South China coast // Two new prenylated phenols from endogenous fungus *Pestalotiopsis vaccinii* of mangrove plant *Kandelia candel* (L.) Druce
649 // N // vaccinol H // inactive // * // *
650 // N // vaccinol I // potent COX-2 inhib. // * // *

403 Ascomycota *Phomopsis longicolla* // (Tracheophyta, *Bruguiera sexangula*) unspecified location // Secondary metabolites of a *Bruguiera sexangula* var. rhynchopetala-derived fungus *Phomopsis longicolla* HL-2232
651 // N // 6-aminopurine-9-carboxylic acid methyl ester // mod. activity vs 4 HTCL // // *
652 // M // * // inactive // * // **s138**



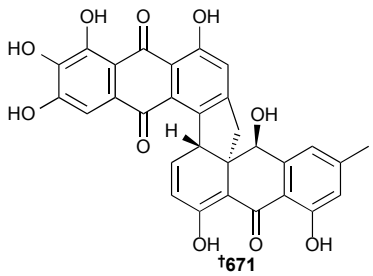
406 Ascomycota *Setophoma terrestris* // (unspecified mangrove leaf litter) unspecified location // Biosynthetically distinct cytotoxic polyketides from *Setophoma terrestris*
653 // R // penicillixanthone A // potent activity vs 2 HTCL, weak AB vs 2 strains // * // **s139**
654 // N // penicillixanthone B // mod. activity vs 2 HTCL, weak AB vs 2 strains // * // *
655 // N // blennolide H // inactive // * // *
656 // M // 11-deoxyblennolide D // inactive // * // **s140**
657 // N // blennolide I // inactive // * // *
658 // N // blennolide J // mod. activity vs 2 HTCL, weak AB vs 2 strains // * // *
659 // N // pyrenomycin // not tested // * // *

407 Ascomycota *Stemphylium* sp. // (Tracheophyta, *Bruguiera sexangula*, leaf) S. China Sea // Two new stemphol sulfates from the mangrove endophytic fungus *Stemphylium* sp. 33231
660 // N // stemphol A // weak AB vs 6 strains // * // *
661 // N // stemphol B // mod. AB vs 6 strains // * // *
662 // M // stemphol // mod. AB vs 6 strains // * // **s141**

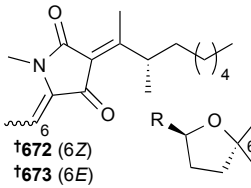
409 Ascomycota // (Tracheophyta, *Ceriops tagal*, leaf) Dong Zhai Gang, Hainan Province, China // Two new sesquiterpenoids from endophytic fungus J3 isolated from mangrove plant *Ceriops tagal*
663 // N // 2α-hydroxyxylaranol B // inactive // * // *
664 // N // 4β-hydroxyxylaranol B // inactive // * // *

410 Ascomycota // S. China Sea // A new coumarin produced by mixed fermentation of two marine fungi
665 // N // 7-(γ,γ-dimethylallyloxy)-6-hydroxy-4-methylcoumarin // inactive // * // *

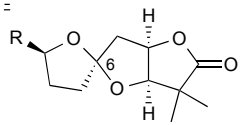
411 Ascomycota // (unidentified mangrove wood) Hat Khanom, Surat Thani Province, Thailand // Palmarumycins from the mangrove fungus BCC 25093
666 // N // palmarumycin P1 // mod. anti-malarial, anti-TB, weak AB vs 1 strain, good activity vs Vero // * // *
667 // N // palmarumycin P2 // good activity vs Vero // * // *
668 // N // palmarumycin P3 // weak anti-TB, mod. activity vs Vero // * // *
669 // N // palmarumycin P4 // not tested // * // *
670 // N // palmarumycin P5 // inactive // * // *



†671



†672 (6*Z*)
†673 (6*E*)

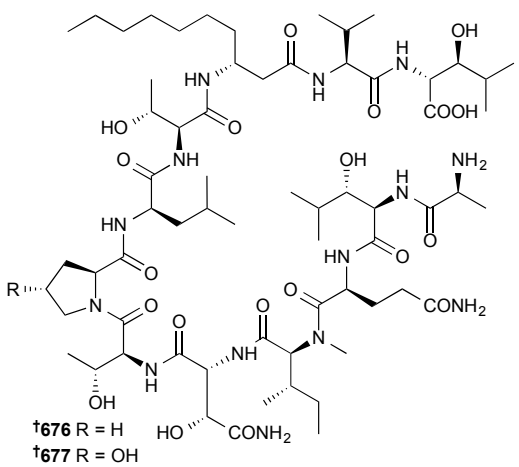


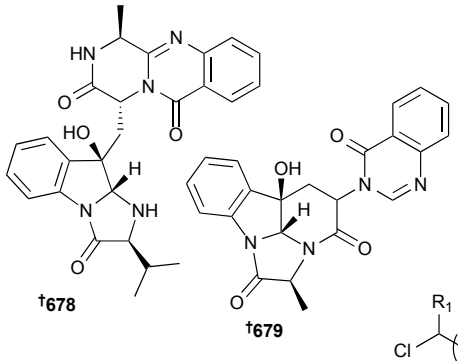
†674 R = $(CH_2)_6CH_3$
†675 R = $(CH_2)_3COOH$

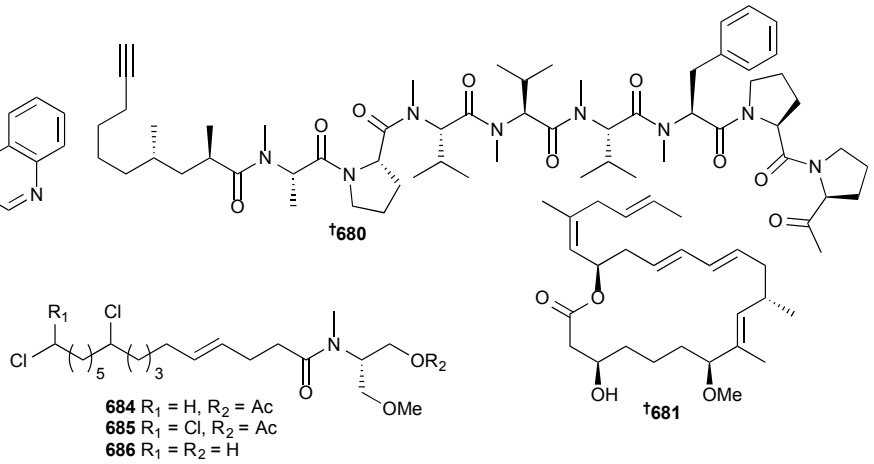
413 Ascomycota *Acremonium* sp. // (Tracheophyta, *Sonneratia caseolaris*, leaves) Dong Zhai Gang Garden, Hainan, PR China // Abs. config. and anti-tumor activity of torrubiellin B
671 // M // torrubiellin B // potent activity vs 5 HTCL // * // **s142**

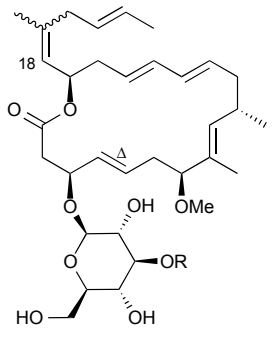
415 Ascomycota *Penicillium* sp. // * // Synthesis, stereochemical assignment and bioactivity of the *Penicillium* metabolites penicillenols B1 and B2
672 // R // penicillenol B1 // mod. activity vs 3 HTCL, AB vs *S. aureus* // * // **s143**
673 // R // penicillenol B2 // mod. activity vs 3 HTCL // * // **s143**

417 Ascomycota *Penicillium* sp. // * // Total synthesis of proposed cephalosporolides H and I
674 // R // cephalopsporolide H // * // * // **s144**
675 // R // cephalopsporolide I // * // * // **s144**









429 Cyanobacteria *Anabaena torulosa* // Moorea, French Polynesia // Isolation and synthesis of laxaphycin B-type peptides: a case study and clues to their biosynthesis
676 // N // acyclolaxaphycin B // not tested // * // *
677 // N // acyclolaxaphycin B3 // not tested // * // *

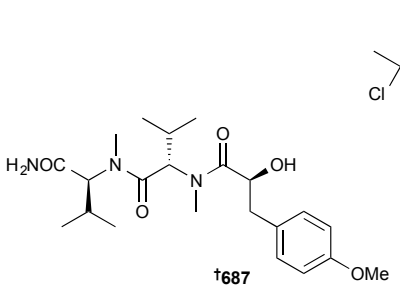
433 Cyanobacteria // Coiba National Park, Panama // Depsipeptide companeramides from a Panamanian marine cyanobacterium associated with the coibamide producer
678 // N // companeramide A // weak antiplasmodial activity, no activity vs 4 HTCL // * // *
679 // N // companeramide B // mod. antiplasmodial activity, no activity vs 4 HTCL // * // *

434 Cyanobacteria *Lyngbya* sp. // Jahana, Okinawa Prefecture, Japan // Jahanyne, an apoptosis-inducing lipopeptide from the marine cyanobacterium *Lyngbya* sp.
680 // N // jahanyne // mod. activity vs 2 HTCL // * // *

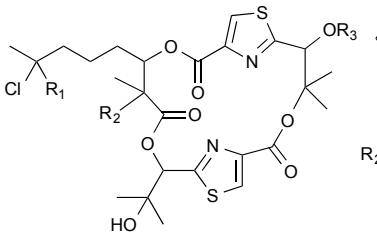
435 Cyanobacteria *Lyngbya* sp. // Ishigaki Is., Japan // Structures and biological activities of novel biselyngbyaside analogs isolated from the marine cyanobacterium *Lyngbya* sp.
681 // N // biselyngbyolide C // strong activity vs 2 HTCL // * // *
682 // N // biselyngbyaside E // very good activity vs 2 HTCL // * // *
683 // N // biselyngbyaside F // good activity vs 2 HTCL // * // *

436 Cyanobacteria *Moorea bouillonii* // Pigeon Is., Papua New Guinea // Combining ms metabolic profiling with genomic analysis: a powerful approach for discov. NPs from cyanobacteria
684 // N // columbamide A // mod. activity vs CB1 and CB2 cannabinoid recpetors // * // *
685 // N // columbamide B // mod. activity vs CB1 and CB2 cannabinoid recpetors // * // *
686 // N // columbamide C // not tested // * // *

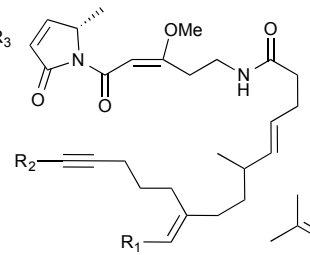
437 Cyanobacteria *Moorea producens* // * // Expanding the described metabolome of the marine cyanobacterium *Moorea producens* JHB through orthogonal natural products workflows.
687 // N // hectoramide // not tested // * // *
688 // N // hectochlorin B // not tested // * // *
689 // N // hectochlorin C // not tested // * // *
690 // N // hectochlorin D // not tested // * // *
691 // N // jamaicamide D // not tested // * // *
692 // N // jamaicamide E // not tested // * // *
693 // N // jamaicamide F // antagonism of voltage gated sodium channels // * // *



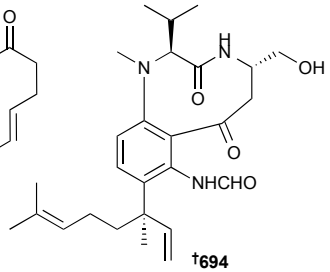
†687



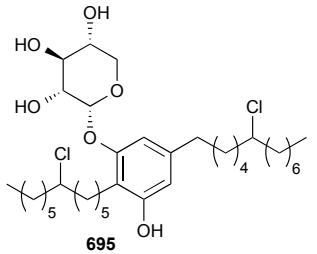
688 R_1 = Cl, R_2 = R_3 = H
689 R_1 = R_2 = H, R_3 = Ac
690 R_1 = Cl, R_2 = Me, R_3 = Ac



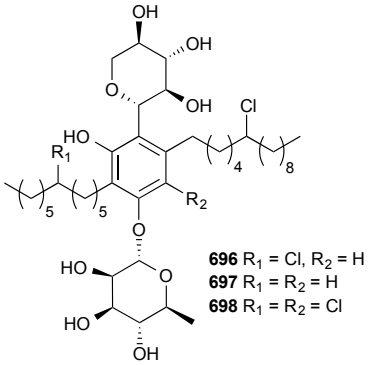
691 R_1 = H, R_2 = Br
692 R_1 = R_2 = H
693 R_1 = Cl, R_2 = I



†694



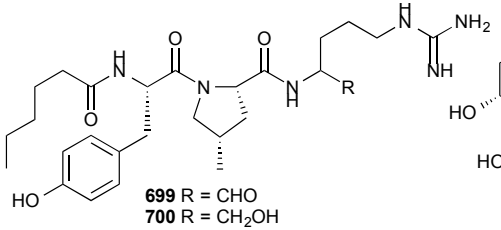
695



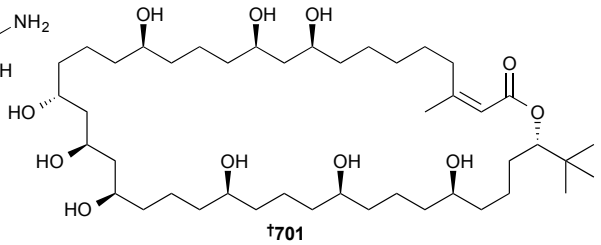
696 R_1 = Cl, R_2 = H
697 R_1 = R_2 = H
698 R_1 = R_2 = Cl

438 Cyanobacteria *Moorea producens* // Obhur, Saudi Arabia // 2,3-Seco-2,3-dioxo-lyngbyatoxin A from a Red Sea strain of the marine cyanobacterium *Moorea producens*
694 // N // 2,3-seco-2,3-dioxo-lyngbyatoxin A // inactive // * // *

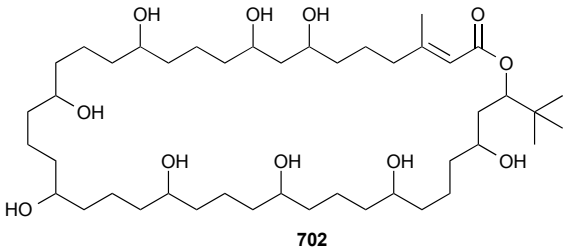
439 Cyanobacteria *Nodosilinea* sp., *Synechocystis salina* // S. Bartolomeu do Mar beach, Portugal // Biosynthesis-assisted structural elucidation of the bartolosides, chlorinated aromatic glycolipids from Cyanobacteria
695 // N // bartoloside A // not tested // * // *
696 // N // bartoloside B // not tested // * // *
697 // N // bartoloside C // not tested // * // *
698 // N // bartoloside D // not tested // * // *



699 R = CHO
700 R = CH_2OH



†701



702

442 Cyanobacteria *Nodularia spumigena* // Baltic Sea // Pseudoaeruginosins, nonribosomal peptides in *Nodularia spumigena*
699 // N // pseudoaeruginosin NS1 // potent trypsin inhibitior // * // *
700 // N // pseudoaeruginosin NS2 // not tested // * // *

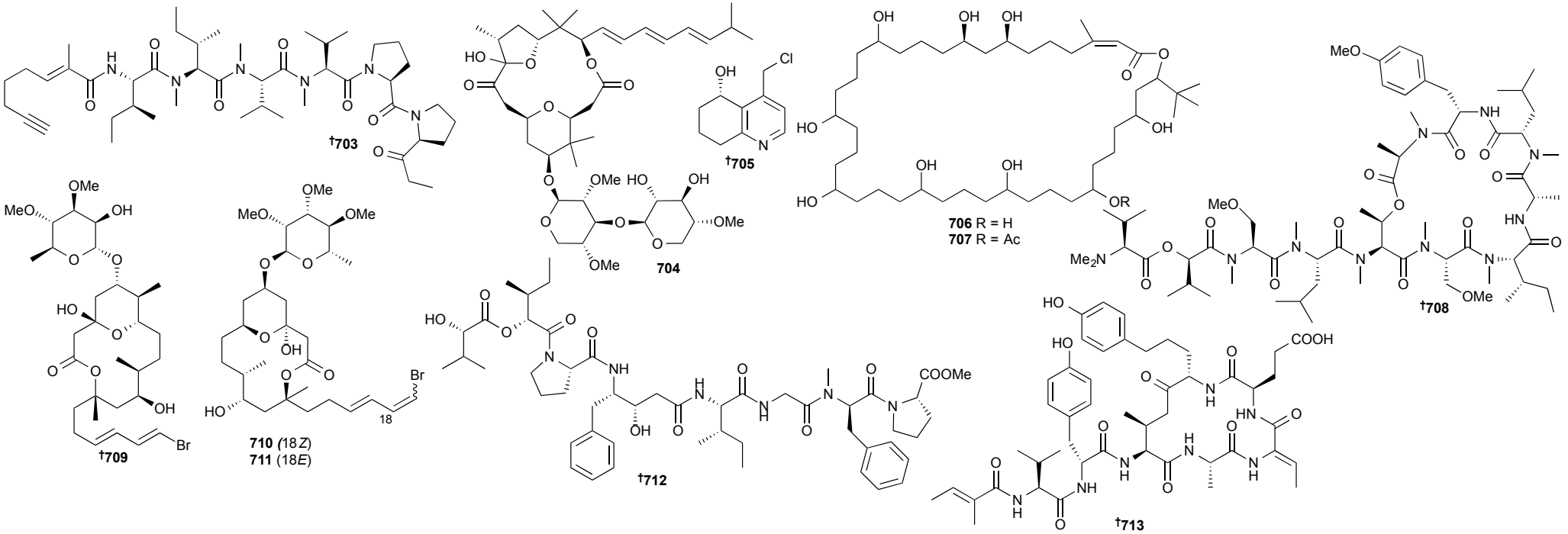
443 Cyanobacteria *Okeania hirsuta* // Isla Bastimentos Park, Panama // Bastimolide A, a potent antimalarial polyhydroxy macrolide from the marine cyanobacterium *Okeania hirsuta*
701 // N // bastimolide A // potent antimalarial activity vs 4 strains, mod. toxicity to Vero cells // * // *

444 Cyanobacteria // Lehua Rock, Niihau, Hawaii // Macrolactone nuiapolide, isolated from a Hawaiian marine cyanobacterium, exhibits anti-chemotactic activity
702 // N // nuiapolide // mod. antichemotactic activity vs Jurkat cells // * // *

445 Cyanobacteria Okeania sp. // Jahana, Okinawa, Japan // Isolation and structure of kurahyne B and total synthesis of the kurahynes
703 // N // kurahyne B // mod. activity vs 2 HTCL // * // *

447 Cyanobacteria *Okeania* sp. // Punto de Vistas, Puerto Rico // Isolation of polycavernoside D from a marine cyanobacterium
704 // N // polycavernoside D // mod. activity vs H-460 // * // *

452 Cyanobacteria // Carrie Bow Cay, Belize // Carriebowlinol, an antimicrobial tetrahydroquinolinol from an assemblage of marine cyanobacteria containing a novel taxon
705 // N // carriebowlinol // broad spectrum AB, activity vs 11 strains, AF activity vs 3 strains // * // *



453 Cyanobacteria // Puntan dos Amantes, Tumon Bay, Guam // Amantelides A and B, polyhydroxylated macrolides with differential broad-spectrum cytotoxicity from a Guamanian marine cyanobacterium
706 // N // amantelide A // potent activity vs 2 HTCL, mod. AB vs 2 strains, mod. AF vs 3 strains // * // *
707 // N // amantelide B // weak activity vs 2 HTCL // * // *

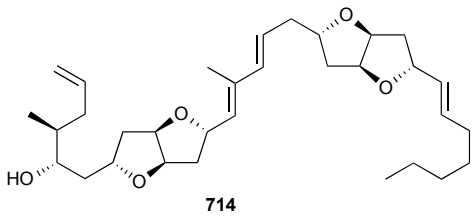
455 Cyanobacteria *Leptolyngbya* sp. // * // Efficient synthesis and stereochemical revision of coibamide A
708 // R // coibamide A // not tested // // **s145**

457 Cyanobacteria *Lyngbya* sp. // * // Total synthesis, stereochemical reassignment, and biological evaluation of (−)-lyngbyaloside B
709 // R // (–)-lyngbyaloside B // strong activity vs HL-60 cells (but already known) // * // **s146**

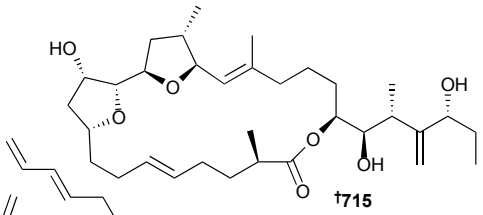
459 Cyanobacteria *Lyngbya bouillonii*, *Moorea bouillonii* // * // Total synthesis and structural reassignment of lyngbyaloside C highlighted by intermolecular ketene esterification
710 // R // (18*Z*)-lyngbyaloside C // not tested // * // **s147**
711 // R // (18*E*)-lyngbyaloside C // not tested // * // **s147**

463 Cyanobacteria *Lyngbya* sp. // * // Total synthesis and stereochemical reassignment of maedamide
712 // R // maedamide // not tested // * // **s148**

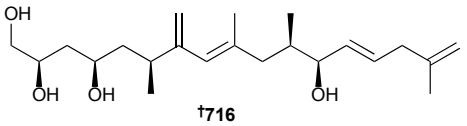
464 Cyanobacteria *Oscillatoria* sp. // * // Total synthesis of largamide B
713 // R // largamide B // not tested // * // **s149**



714



†715



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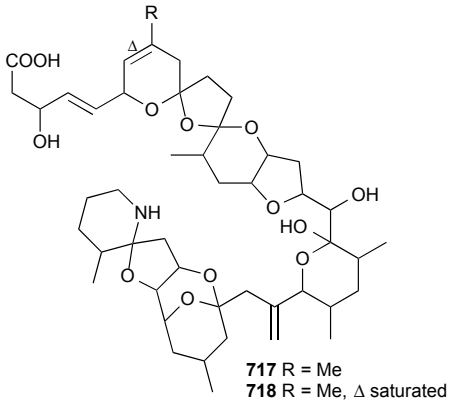
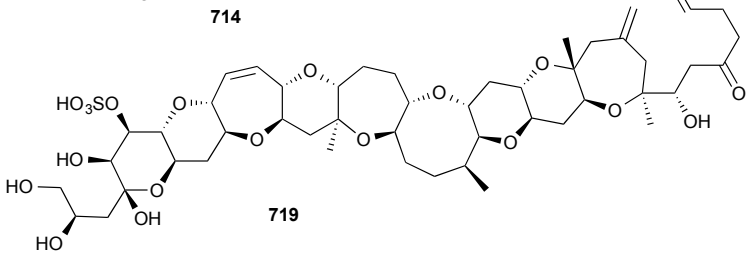


717 R = Me
718 R = Me, Δ saturated



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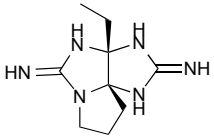


720

478 Dinophyta *Amphidinium* sp. // Iriomote Is., Japan // Amphirionin-2, a novel linear polyketide with potent cytotoxic activity from a marine dinoflagellate *Amphidinium* species
714 // N // amphirionin-2 // potent activity vs 2 HTCL // * // *

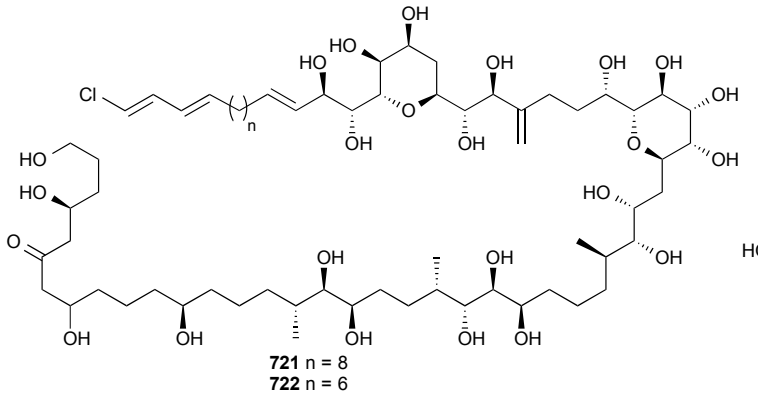
479 Dinophyta *Amphidinium* sp. // Iriomote Is., Japan // Iriomoteolide-2a, a cytotoxic 23-membered macrolide from marine benthic dinoflagellate *Amphidinium* species
715 // N // iriomoteolide-2a // potent activity vs 2 HTCL, in vivo activity vs P388 // * // *

480 Dinophyta *Amphidinium* sp. // Ishigaki Is., Japan // Amphidinin G, a putative biosynthetic precursor of amphidinin A from marine dinoflagellate *Amphidinium* sp.
716 // N // amphidinin G // mod. AF vs *T. mentagrophytes* // * // *

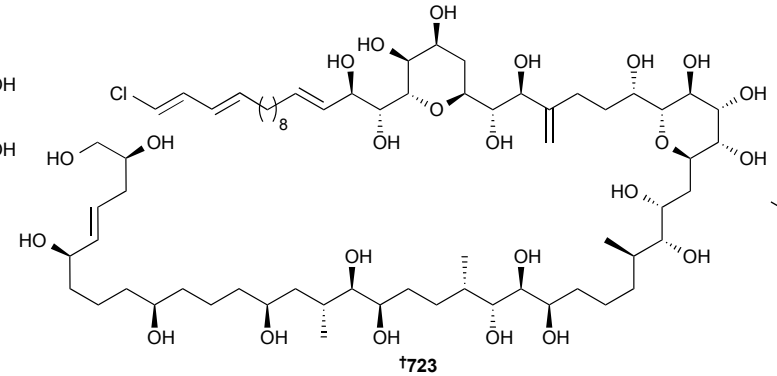
481 Miozoa *Azadinium poporum* // Shiwha Bay, S. Korea // Structure elucidation and *in vitro* toxicity of new azaspiracids isolated from the marine dinoflagellate *Azadinium poporum*
717 // N // AZA-36 // mod. toxicity to the Jurkat E6-1 // * // *
718 // N // AZA-37 // mod. toxicity to the Jurkat E6-1 // * // *

482 Dinophyta *Gambierdiscus belizeanus* // * // Gambierone, a ladder-shaped polyether from the dinoflagellate *Gambierdiscus belizeanus*
719 // N // gambierone // mod. effects on cytostolic calcium currents // * // *

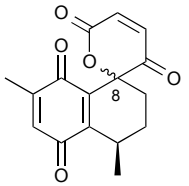
485 Cyanobacteria *Anabaena circinalis*, Dinophyta *Alexandrium tamarense* // * // Synthesis of a tricyclic bisguanidine compound structurally related to saxitoxin and its identification in paralytic shellfish toxin-producing microorganisms
720 // N // cyclic-C' // weak inhib. of voltage-gated sodium channels // * // **s150**



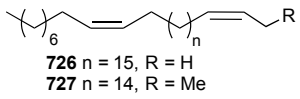
721 n = 8
722 n = 6



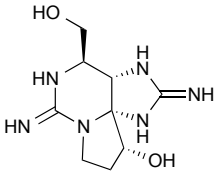
†**723**



724 (8*R*)
725 (8*S*)



726 n = 15, R = H
727 n = 14, R = Me



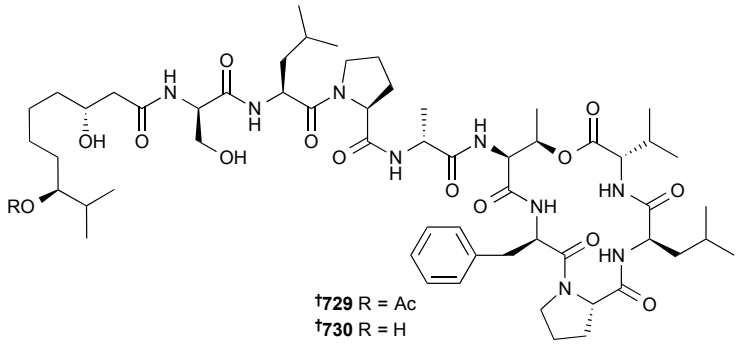
728

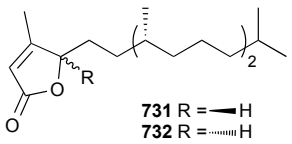
489 Miozoa *Karlodinium* sp. // Wilmington River, Georgia, USA // Stereochemical studies of the karlotoxin class using NMR spectroscopy and DP4 chemical-shift analysis: insights into their mechanism of action
721 // M // karlotoxin 8 // MOA investigated // * // **s151**
722 // M // karlotoxin 9 // activity already known // * // **s152**
723 // R // karlotoxin 2 // activity already known // * // **s153**

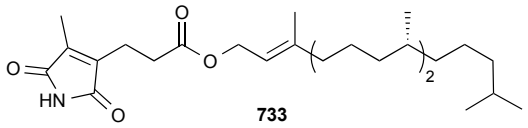
491 Ciliophora *Spirostomum teres* // * // Spirostomin, defense toxin of the ciliate *Spirostomum teres*: isolation, structure elucidation, and synthesis
724 // N // spirostomin A // mixture lethal to another dinoflagellate // * // **s154**
725 // N // spirostomin B // mixture lethal to another dinoflagellate // * // *

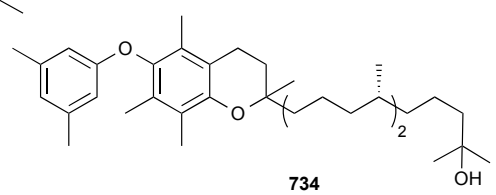
492 Haptophyta *Emiliania huxleyi*, *Gephyrocapsa oceanica* // Great Barrier Reef, Australia; Yaene Port, Hachijo-jima Is., Japan // n-Nonacosadienes from the marine haptophytes *Emiliania huxleyi* and *Gephyrocapsa oceanica*
726 // N // * // not tested // * // *
727 // N // * // not tested // * // *

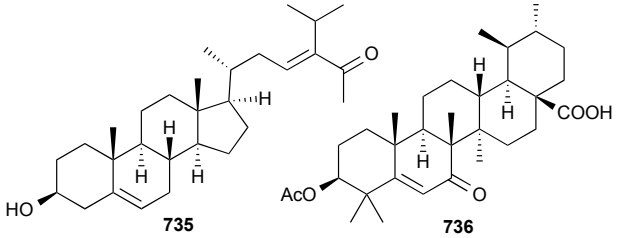
494 Miozoa *Alexandrium tamarense* // Ofunato, Japan // The presence of 12β-deoxydecarbamoylsaxitoxin in the Japanese toxic dinoflagellate *Alexandrium* determined by simultaneous analysis for paralytic shellfish toxins using HILIC-LC–MS/MS
728 // M // 12β-deoxydecarbamoylsaxitoxin // not tested // * // **s155**

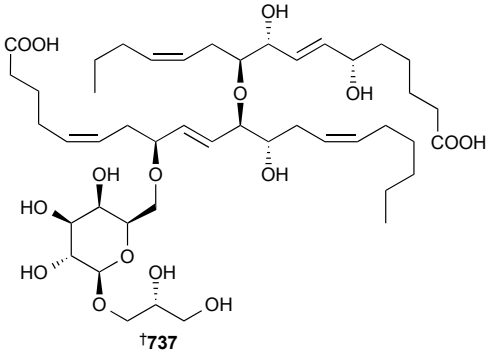










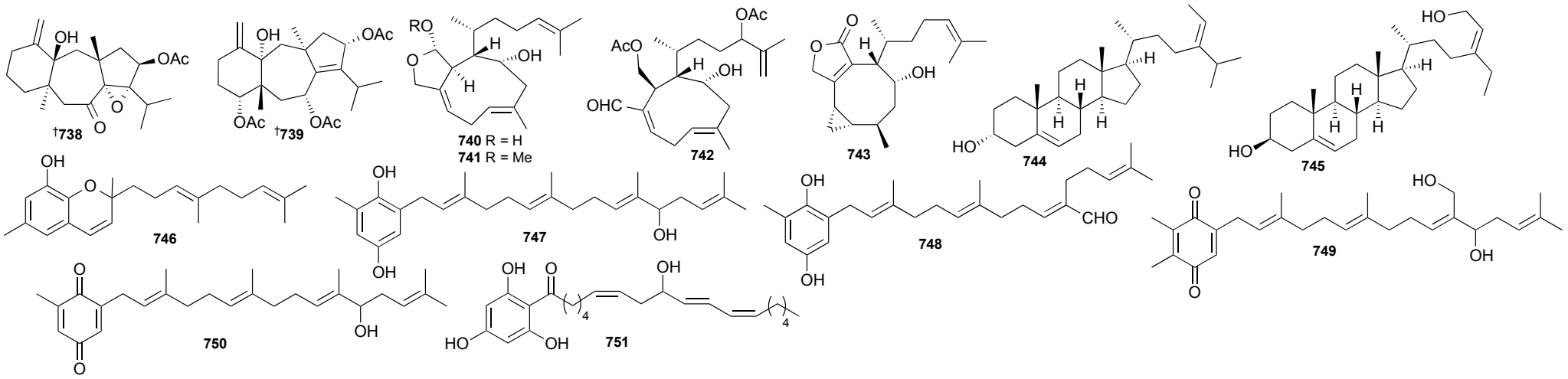


503 Chlorophyta *Derbesia marina* // Mebama, Mie Prefecture, Japan // Mebamamides A and B, cyclic lipopeptides isolated from the green alga *Derbesia marina*
729 // N // mebamamide A // weak activity against HeLa and HL60 // chiral HPLC, Mosher and dansyl-Edman for abs. config. // *
730 // N // mebamamide B // not active but differentiation of HL60 cells at 100μM // chiral HPLC, Mosher and dansyl-Edman for abs. config. // *

504 Chlorophyta *Caulerpa racemosa* // Zhanjiang, Guangdong Province, China // Bioactive constituents from the green alga *Caulerpa racemosa*
731 // N // racemobutenolid A // not active // inseparable from B // *
732 // N // racemobutenolid B // not active // inseparable from A // *
733 // N // 4α,5α-dehydrodiodictyonema A // active against PTP1B. IC_{50} 2.3 μM // first haematinic acid deriv. // *
734 // N // α-tocoxylenoxy // not active // first 3,5-dimethylphenoxy deriv. // *
735 // N // (23*E*)-3β-hydroxystigmasta-5,23-dien-28-one // active against PTP1B. IC_{50} 3.8 μM // co-occurs with 8 known sterols // *

505 Chlorophyta *Codium dwarkense* // Gulf of Oman // New α-glucosidase inhibitory triterpenic acid from marine macro green alga *Codium dwarkense* Boergs
736 // N // dwarkenoic acid // active against α-glucosidase // co-occurs with 6 known sterols // *

507 Chlorophyta *Avrainvillea nigricans* // * // Structure elucidation of nigricanoside A through enantioselective total synthesis
737 // R // nigricanoside A // synthetic material is inactive // natural material was ~90% pure // **s156**



519 Ochrophyta *Canistrocarpus cervicornis* // Baia da Ribeira, Angra dos Reis City, Brazil // 10β-acetoxy-8α,9α-epoxy-14β-hydroxy-7-oxodolastane - a new diterpene isolated from the Brazilian brown macroalga *Canistrocarpus cervicornis*
738 // N // 10β-acetoxy-8α,9α-epoxy-14β-hydroxy-7-oxodolastane // not tested // * // *

520 Ochrophyta *Canistrocarpus cervicornis* // Ribeira Bay, Angra dos Reis City, Rio de Janeiro State // 4α-Acetoxyamijidictyol – a new antifeeding dolastane diterpene from the Brazilian brown alga *Canistrocarpus cervicornis*
739 // N // 4α-acetoxyamijidictyol // inhibits feeding by the sea urchin *Lytechinus variegatus* // X-ray analysis. 4 other dolastanes isolated // *

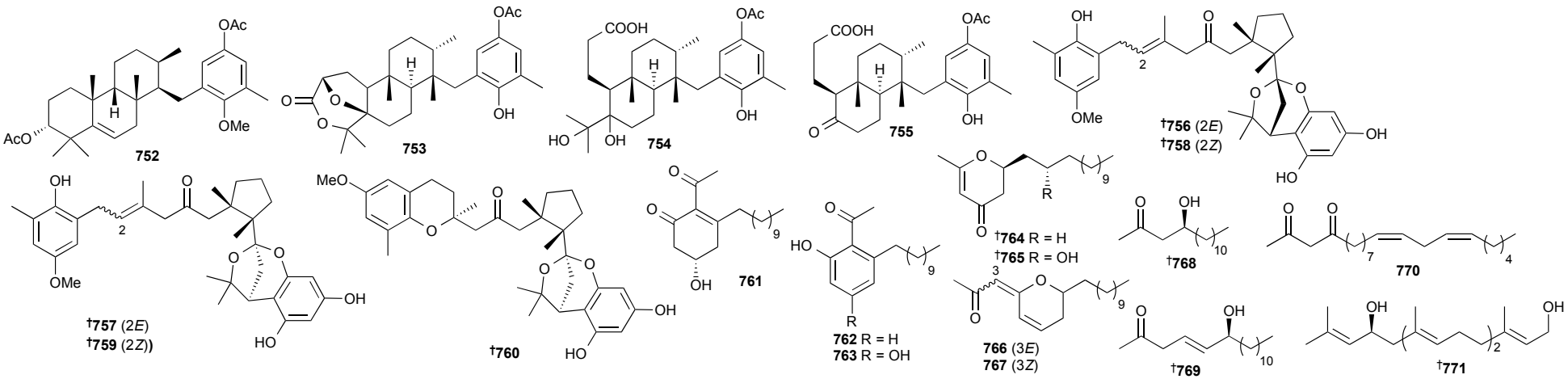
521 Ochrophyta *Dictyota plectens* // Xuwen coast, Zhanjiang, China // Further new xenicanes from a Chinese collection of the brown alga *Dictyota plectens*
740 // N // 4α-hydroxyisodictyohemiacetal // weakly active against wild-type HIV-1 // 4 known xenicanes also isolated // *
741 // N // 4α-hydroxyisodictyoacetal // inactive against wild-type HIV-1 // 4 known xenicanes also isolated // *
742 // N // 13,18-diacetoxy-4-hydroxyisodictyo-19-al // inactive against wild-type HIV-1 // 4 known xenicanes also isolated // *
743 // N // 4α-hydroxypachylactone // activity against LPS-induced NO production // 4 known xenicanes also isolated // *

522 Ochrophyta *Cystoseira trinodis* // El-shuaiba, Saudi Arabia // Two new cytotoxic C-29 steroids from the Red Sea brown alga *Cystoseira trinodis*
744 // M // stigmasta-5,24(28)-dien-3α-ol // mod. cytotox. (7-33 μM) agaisnt 4 HTCL // (12*E*)-*cis*-maneonene isolated for first time from a *Cystoseira* sp. // *
745 // N // stigmasta-5,24(28)-dien-3β,29-diol // mod. cytotox. (7-33 μM) against 4 HTCL // fucoxanthin and 3 known sterols also isolated // *

523 Ochrophyta *Homoeostrichus formosana* // San-Hsian-Tai, Taiwan // Bioactive chemical constituents from the brown alga *Homoeostrichus formosana*
746 // N // 2-(4',8'-dimethylnona-3'*E*,7'-dienyl)-8-hydroxy-2,6-dimethyl-2*H*-chromene // various levels of cytotox., AB and anti-inflamm. activity // 4 known compounds also isolated // *

524 Ochrophyta *Sargassum paradoxum* // Governor Reef, Port Phillip Bay, Australia // Chemical profiling (HPLC-NMR & HPLC-MS), isolation, and identification of bioactive meroditerpenoids from the Southern Australian marine brown alga *Sargassum paradoxum*
747 // N // paradoxhydroquinone // AM/AF evaluation against 5 bacteria and 1 fungus // 9 known meroditerpenoids also isolated // *
748 // N // sargahydroquinal // AM/AF evaluation against 5 bacteria and 1 fungus // 9 known meroditerpenoids also isolated // *
749 // N // paradoxquinol // AM/AF evaluation against 5 bacteria and 1 fungus // 9 known meroditerpenoids also isolated // *
750 // N // paradoxquinone // AM/AF evaluation against 5 bacteria and 1 fungus // 9 known meroditerpenoids also isolated // *

525 Ochrophyta *Cystophora subfarcinata,* Ochrophyta *Cystophora retroflexa,* Ochrophyta *Sargassum fallax* // Governor Reef, Port Phillip Bay, Australia // Dereplication and chemotaxonomical studies of marine algae of the Ochrophyta and Rhodophyta phyla
751 // N // retroflexanone // crude extracts evaluated against 6 bacteria and 3 fungi // 12 known, 3 partially identifed compounds characterised by HPLC-NMR/MS // *



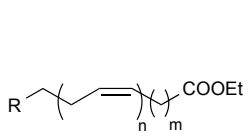
526 Ochrophyta *Stypopodium flabelliforme* // Playa Anakena, Easter Is., Chile // Seco-taondiol, an unusual meroterpenoid from the Chilean seaweed *Stypopodium flabelliforme* and its gastroprotective effect in mouse model
752 // N // *O,C*(3)-*seco*-9-ene-6β-taondiol // assayed for gastroprotective activity // 10 known meroditerpenoids also isolated // *

527 Ochrophyta *Stypopodium zonale* // Marataízes, Espírito Santo State // Intraspecific variation of meroditerpenoids in *Stypopodium zonale* guiding the isolation of new compounds
753 // N // stypofuranlactone // not tested // 3 known meroditerpenoids also isolated // *
754 // N // 10,18-dihydroxy-5'a-desmethyl-5'-acetylatomaric acid // not tested // 3 known meroditerpenoids also isolated // *
755 // N // 10-keto-10-deisopropyliden-5'a-desmethyl-5'-acetylatomaric acid // not tested // 3 known meroditerpenoids also isolated // *

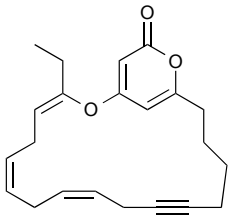
528 Ochrophyta *Cystoseira tamariscifolia* // Tipaza, Algeria // Cystophloroketals A–E, unusual phloroglucinol–meroterpenoid hybrids from the brown alga *Cystoseira tamariscifolia*
756 // N // cystophloroketal A // tested for antifouling properties // ECD and calculated ECD used for abs. config. // *
757 // N // cystophloroketal B // tested for antifouling properties // ECD and calculated ECD used for abs. config. // *
758 // N // cystophloroketal C // tested for antifouling properties // ECD and calculated ECD used for abs. config. // *
759 // N // cystophloroketal D // tested for antifouling properties // ECD and calculated ECD used for abs. config. // *
760 // N // cystophloroketal E // tested for antifouling properties // ECD and calculated ECD used for abs. config. // *

532 Ochrophyta *Lobophora variegata* // El Medano, Tenerife, Canary Is. // Acetate-derived metabolites from the brown alga *Lobophora variegata*
761 // N // lobophorol A // MIC against *S. aureus* was 25 µg/mL // * // *
762 // N // lobophorol B // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *
763 // N // lobophorol C // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *
764 // N // lobophopyranone A // not tested // * // *
765 // N // lobophopyranone B // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *
766 // N // lobophorone A // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *
767 // N // lobophorone B // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *
768 // N // lobophorone C // not tested // * // *
769 // N // lobophorone D // not tested // * // *
770 // N // lobophorone E // tested against *E. faecalis*, *E. coli* and *S. aureues* // * // *

537 Ochrophyta *Bifurcaria bifurcata* // * // Assignment of absolute configurations of highly flexible linear diterpenes from the brown alga *Bifurcaria bifurcata* by VCD spectroscopy
771 // R // elegandiol // not tested // abs. config. by calculated VCD. discussion of exptl. parameters. // **s157**



772 n = 5, m =7, R = H
773 n = 2, m =8, R = *n*Bu



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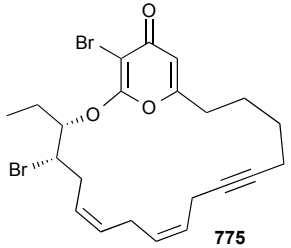

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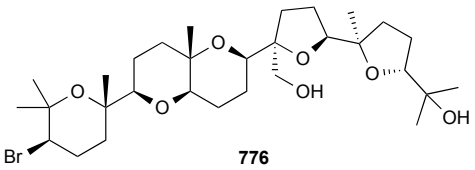

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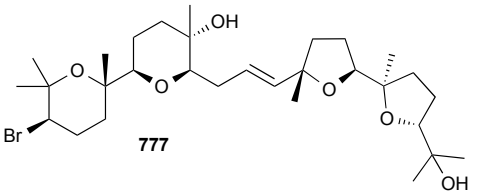

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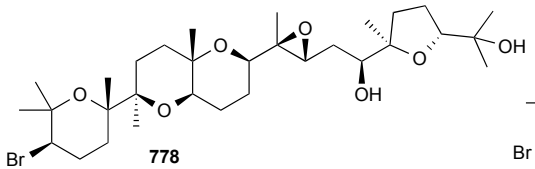

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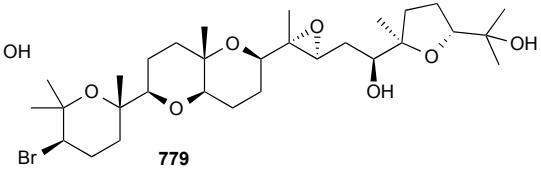

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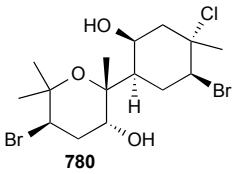

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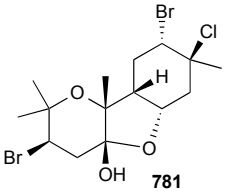

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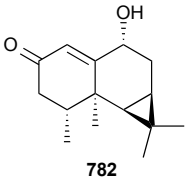

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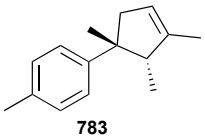


783

563 Rhodophyta *Laurencia okamurae* // Nanji Is., Zhejiang Province, China // Two new antifungal polyunsaturated fatty acid ethyl esters from the red alga *Laurencia okamurai*
772 // N // * // mod. AF activity // * // *
773 // N // * // weak AF activity // * // *

564 Rhodophyta *Phacelocarpus labillardieri*, *P. peperocarpos* // * // Total synthesis and stereochemical revision of phacelocarpus 2-pyrone A
774 // R // phacelocarpus 2-pyrone A // * // revision by synthesis // **s158**

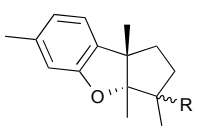
565 Rhodophyta *Phacelocarpus labillardieri* // * // Total synthesis of an exceptional brominated 4-pyrone derivative of algal origin: an exercise in gold catalysis and alkyne metathesis
775 // R // * // * // revision by synthesis // **s159**

566 Rhodophyta *Laurencia viridis* // Paraiso Floral, Tenerife, Canary Is. // Oxasqualenoids from *Laurencia viridis*: combined spectroscopic–computational analysis and antifouling potential
776 // N // 28-hydroxysaiyacenol B // mod. inhibit. of diatom growth and zoospore germination // * // *
777 // N // saiyacenol C // mod. inhibit. of diatom growth, inactive vs zoospore germination // * // *
778 // N // 15,16-epoxythyrsiferol A // inactive vs diatom growth and zoospore germination // * // *
779 // N // 15,16-epoxythyrsiferol B // not tested // * // *

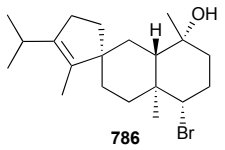
567 Rhodophyta *Laurencia aldingensis* // * // Computationally driven reassignment of the structures of aldingenins A and B
780 // R // aldingenin A/5-(*S*)-hydroxycaespitol // * // revision by computational methods // **s160**
781 // R // aldingenin B // * // revision by computational methods // **s161**

568 Rhodophyta *Laurencia complanata* // Ifaty, Madagascar // Red algae (Rhodophyta) from the coast of Madagascar: preliminary bioactivity studies and isolation of natural products
782 // M // debilone // inactive as AM // * // **s162**

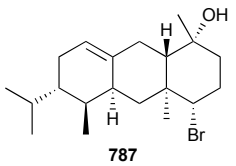
569 Rhodophyta *Laurencia nangii* // Lohok Butun, Sabah, Malaysia // New laurene-type sesquiterpene from Bornean *Laurencia nangii*
783 // N // neolaurene // mod. AB activity // * // *



784 R = ····· OOH
785 R = ▬ OOH



786



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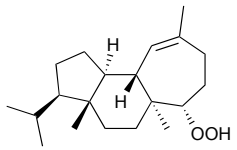

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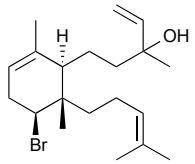

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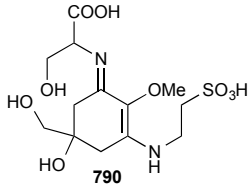
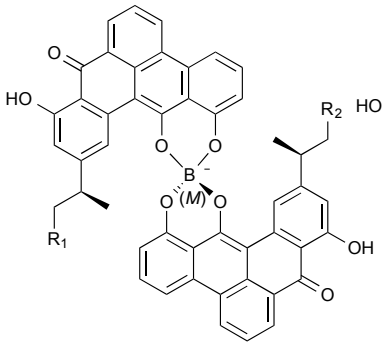
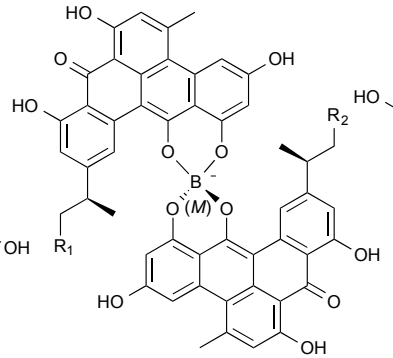


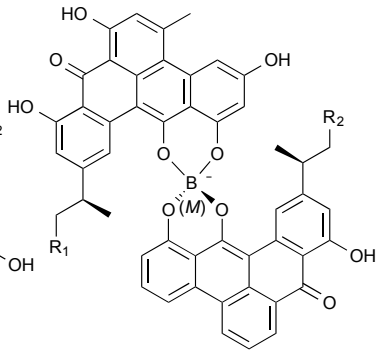
790



†**791** $R_1 = R_2$ = H, (*M*+*P*)
†**792** R_1 = H, R_2 = Me
†**793** R_1 = H, R_2 = Me, (*P*)
†**802** $R_1 = R_2$ = Me
†**803** $R_1 = R_2$ = Me, (*P*)



†**796** $R_1 = R_2$ = H, (*M*+*P*)
†**794** $R_1 = R_2$ = Me
†**795** $R_1 = R_2$ = Me, (*P*)
†**797** R_1 = H, R_2 = Me
†**798** R_1 = H, R_2 = Me, (*P*)



†**799** $R_1 = R_2$ = H, (*M*+*P*)
†**800** R_1 = H, R_2 = Me
†**801** $R_1 = R_2$ = Me (*P*)

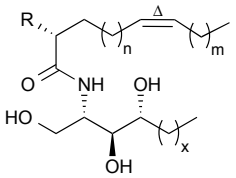
570 Rhodophyta *Laurencia okamurae* // Nanji Is., Zhejiang Province, China // New laurane-type sesquiterpenoids from the Chinese red alga *Laurencia okamurai* Yamada
784 // N // debromo-3α-hydroperoxy-3-epiaplysin // inactive vs PTP1B // * // *
785 // N // debromo-3β-hydroperoxyaplysin // PTP1B inhibit. IC_{50} 13.0 µg/mL // * // *

571 Rhodophyta *Sphaerococcus coronopifolius* // Liapades Bay, Corfu, Greece // Diterpenes with unprecedented skeletons from the red alga *Sphaerococcus coronopifolius*
786 // N // spirosphaerol // mod./weak activity vs HTCLs // * // *
787 // N // anthrasphaerol // mod./weak activity vs HTCLs // * // *
788 // N // corfusphaeroxide // mod./weak activity vs HTCLs // * // *

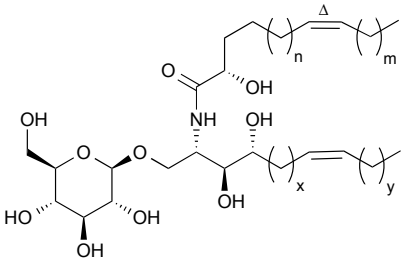
572 Rhodophyta *Sphaerococcus coronopifolius* // Peniche, Portugal // Antitumor and antimicrobial potential of bromoditerpenes isolated from the red alga, *Sphaerococcus coronopifolius*
789 // N // sphaerodactylomelol // antiproliferative vs HepG-2 cells, IC_{50} 280 µM // * // *

573 Rhodophyta *Catenella repens* // Roscoff, France // Analysis of mycosporine-like amino acids in selected algae and cyanobacteria by hydrophilic interaction liquid chromatography and a novel MAA from the red alga *Catenella repens*
790 // N // catenelline // UV protection // * // *

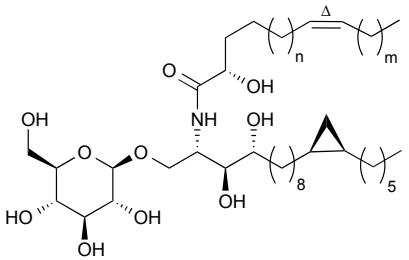
575 Rhodophyta *Solenopora jurassica* // Les Petites-Armoises, France // Structure and abs. config. of Jurassic polyketide-derived spiroborate pigments obtained from microgram quantities
791 // N // borolithochrome G // not tested // * // *
792 // N // borolithochrome H1 // not tested // * // *
793 // N // borolithochrome H2 // not tested // * // *
794 // N // borolithochrome C1 // not tested // * // *
795 // N // borolithochrome C2 // not tested // * // *
796 // N // borolithochrome A // not tested // * // *
797 // N // borolithochrome B1 // not tested // * // *
798 // N // borolithochrome B2 // not tested // * // *
799 // N // borolithochrome D // not tested // * // *
800 // N // borolithochrome E // not tested // * // *
801 // N // borolithochrome F // not tested // * // *
802 // N // borolithochrome I1 // not tested // * // *
803 // N // borolithochrome I2 // not tested // * // *



804 R = H, n = 4, m = 3, x = 9, Δ saturated
805 R = OH, n = 6, m = 6, x = 20, Δ saturated
806 R = OH, n = 6, m = 7, x = 18



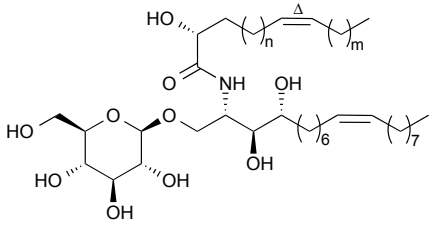
†**807** n = 10, m = 5, x = 6, y = 7
†**808** n = 10, m = 5, x = 8, y = 5
809 n = 11, m = 5, x = 6, y = 7
810 n = 11, m = 5, x = 8, y = 5
813 n = 10, m = 5, x = 6, y = 7 Δ saturated
814 n = 12, m = 5, x = 6, y = 7



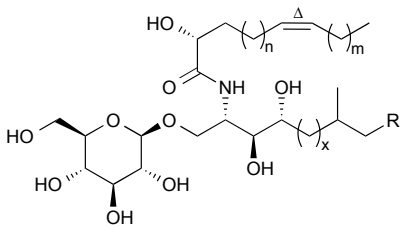
811 n = 10, m = 5
812 n = 11, m = 5
815 n = 10, m = 5, Δ saturated

587 Porifera *Spheciospongia vagabunda* // Ras Mohamed, Egypt // Cytotoxic ceramides from the Red Sea sponge *Spheciospongia vagabunda*
804 // N // * // weak activity vs 3 HTCL // * // *
805 // N // * // weak activity vs 3 HTCL // * // *
806 // N // * // weak activity vs 3 HTCL // * // *

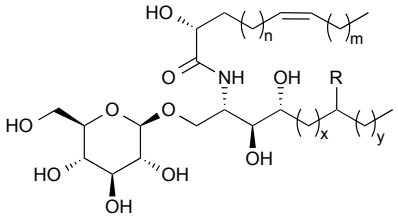
588 Porifera *Aulosaccus* sp. // Dredged (-505 m), Iturup Is., Kuril Is., Russia // Cerebrosides from a Far-Eastern glass sponge *Aulosaccus* sp.
807 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
808 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
809 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
810 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
811 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
812 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
813 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
814 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *
815 // N // * // not tested // method for determ. 2-hydroxy fatty acid config. using achiral GCMS. // *



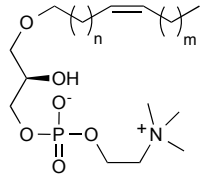
816 n = 11, m = 5, (Δ*E*)
817 n = 11, m = 3, (Δ*E*)
818 n = 12, m = 3, (Δ*Z*)
819 n = 11, m = 4, (Δ*Z*)
820 n = 11, m = 3, (Δ*Z*)
821 n = 11, m = 2, Δ saturated
822 n = 10, m = 2, Δ saturated



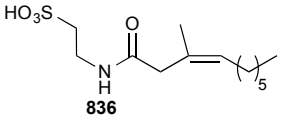
823 n = 15, m = 5, x = 8, R = H, (Δ*Z*)
824 n = 12, m = 5, x = 8, R = H, (Δ*Z*)
825 n = 11, m = 6, x = 8, R = H, Δ saturated
826 n = 11, m = 5, x = 8, R = H, Δ saturated
827 n = 11, m = 5, x = 9 ,R = H, (Δ*Z*)
828 n = 12, m = 5, x = 9, R = H, (Δ*E*)
829 n = 12, m = 5, x = 9, R = H, (Δ*Z*)
830 n = 11, m = 5, x = 9, R = Me, (Δ*Z*)
831 n = 12, m = 5, x = 9, R = Me, (Δ*Z*)



832 n = 12, m = 5, x = 4, y = 6, R = Me
833 n = 11, m = 5, x = 5, y = 5, R = H

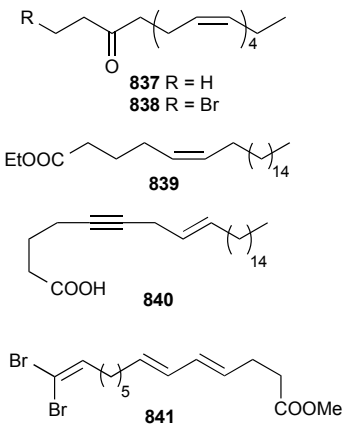


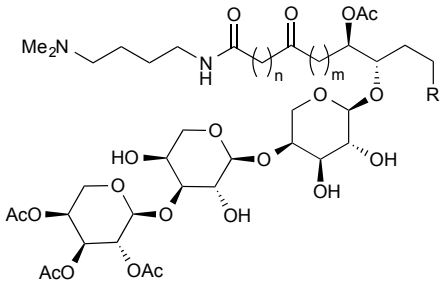
834 n = 3, m = 11
835 n = 5, m = 9

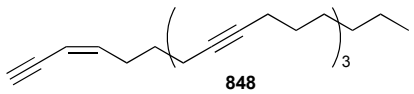


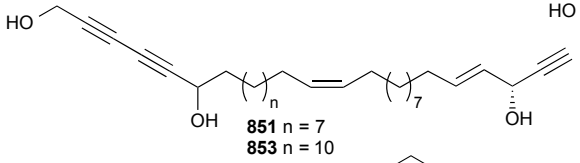
836

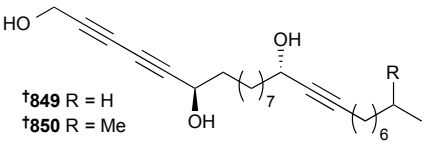
589 Porifera *Aulosaccus* sp. // Dredged (-500 m) near Iturup Is., Kuril Is., Russia // Structural analysis of the minor cerebrosides from a glass sponge *Aulosaccus* sp.
816 // N // * // not tested // isolated as mixture with other compounds in this collection // *
817 // N // * // not tested // isolated as mixture with other compounds in this collection // *
818 // N // * // not tested // isolated as mixture with other compounds in this collection // *
819 // N // * // not tested // isolated as mixture with other compounds in this collection // *
820 // N // * // not tested // isolated as mixture with other compounds in this collection // *
821 // N // * // not tested // isolated as mixture with other compounds in this collection // *
822 // N // * // not tested // isolated as mixture with other compounds in this collection // *
823 // N // * // not tested // isolated as mixture with other compounds in this collection // *
824 // N // * // not tested // isolated as mixture with other compounds in this collection // *
825 // N // * // not tested // isolated as mixture with other compounds in this collection // *
826 // N // * // not tested // isolated as mixture with other compounds in this collection // *
827 // N // * // not tested // isolated as mixture with other compounds in this collection // *
828 // N // * // not tested // isolated as mixture with other compounds in this collection // *
829 // N // * // not tested // isolated as mixture with other compounds in this collection // *
830 // N // * // not tested // isolated as mixture with other compounds in this collection // *
831 // N // * // not tested // isolated as mixture with other compounds in this collection // *
832 // N // * // not tested // isolated as mixture with other compounds in this collection // *
833 // N // * // not tested // isolated as mixture with other compounds in this collection // *
590 Porifera *Spirastrella purpurea* // Weizhou Is., Guangxi, China // Lysophospholipids from the Guangxi sponge *Spirastrella purpurea*
834 // N // * // Some AF activity vs *Cryptococcus neoformans* // * // *
835 // N // * // Some AF activity vs *Cryptococcus neoformans* // * // *
591 Porifera *Callyspongia* sp. // Hainan Is., China // A new *N*-acyl taurine from the South China Sea marine sponge *Callyspongia* sp.
836 // N // * // not tested // * // *

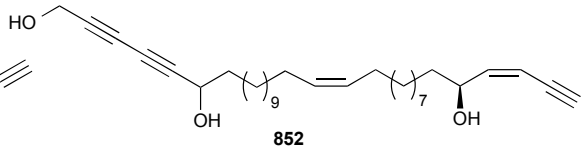


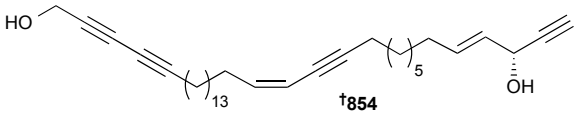












592 Porifera *Haliclona* sp. // Weizhou Is., Guangxi, China // Three new polyunsaturated lipids from a Guangxi marine sponge *Haliclona* sp.
837 // N // * // inactive vs NO production in RAW264.7 cells // * // *
838 // N // * // inactive vs NO production in RAW264.7 cells // * // *
839 // N // * // not tested // * // *

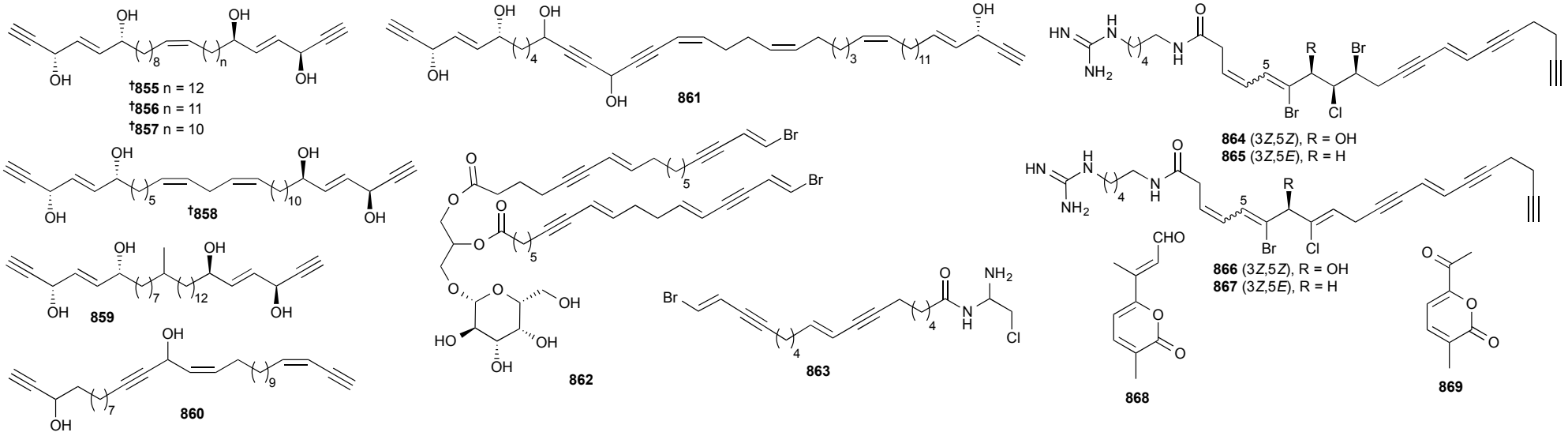
593 Porifera *Biemna ehrenbergi* // Jeddah, Saudi Arabia // Ehrenasterol and biemnic acid; new bioactive compounds from the Red Sea sponge *Biemna ehrenbergi*
840 // N // biemnic acid // mod. AF and cytotox. to 1 HTCL // * // *

594 Porifera *Xestospongia testudinaria* // Weizhou Is., Guangxi, China // Brominated polyunsaturated lipids with protein tyrosine phosphatase-1B inhibitory activity from Chinese marine sponge *Xestospongia testudinaria*
841 // N // * // inactive as PTP1B inhib. // * // *

595 Porifera *Stelletta* sp. // Oshima-Shinsone, Japan // Cytotoxic glycosylated fatty acid amides from a *Stelletta* sp. marine sponge
842 // N // stellettoside A1 // inactive vs 1 HTCL // isolated as mixture with **843** // *
843 // N // stellettoside A2 // inactive vs 1 HTCL // isolated as mixture with **842** // *
844 // N // stellettoside B1 // mod. activity vs 1 HTCL // isolated as mixture of **844**–**847** // *
845 // N // stellettoside B2 // mod. activity vs 1 HTCL // isolated as mixture of **844**–**847** // *
846 // N // stellettoside B3 // mod. activity vs 1 HTCL // isolated as mixture of **844**–**847** // *
847 // N // stellettoside B4 // mod. activity vs 1 HTCL // isolated as mixture of **844**–**847** // *

596 Porifera *Callyspongia implexa* // Safaga, Egypt // Antichlamydial sterol from the Red Sea sponge *Callyspongia* aff. *implexa*
848 // N // callimplexen A // inactive vs *Chlamdydia trachomatis* infection in HeLa cells. // * // *

597 Porifera *Petrosia* sp., *Halichondria* sp // Iriomote Is., Okinawa, Japan // Six new polyacetylenic alcohols from the marine sponges *Petrosia* sp. and *Halichondria* sp.
849 // N // strongylotriol A // mod. activity vs 2 HTCL // isolated from *Petrosia* sp. // *
850 // N // strongylotriol B // mod. activity vs 2 HTCL // isolated from *Petrosia* sp. // *
851 // N // pellynol J // potent activity vs 2 HTCL // isolated from *Petrosia* sp. // *
852 // N // isopellynol A // mod. activity vs 2 HTCL // isolated from *Halichondria* sp. // *
853 // N // pellynol K // not tested // isolated from *Halichondria* sp. // *
854 // N // pellynol L // mod. activity vs 2 HTCL // isolated from *Halichondria* sp. // *

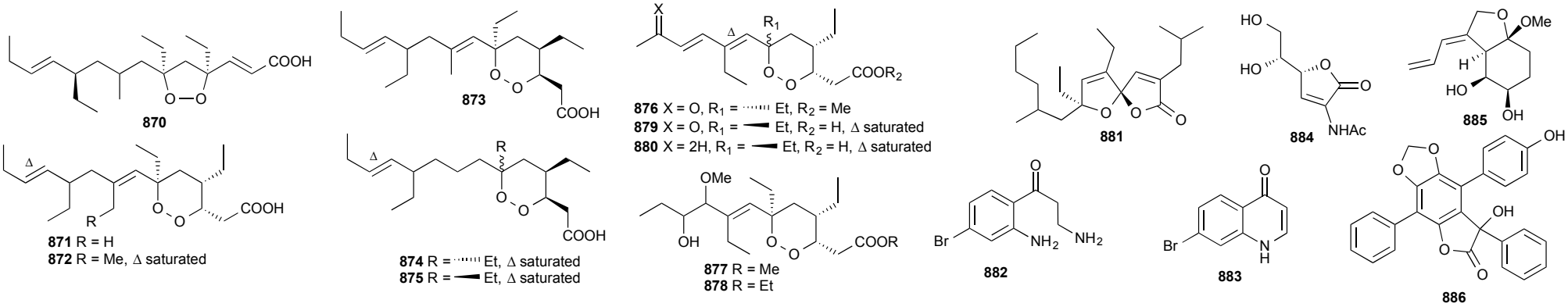


598 Porifera *Pleroma* sp. // Dredged (-200 m), Yaku-Shin Sone, Japan // Cytotoxic linear acetylenes from a marine sponge *Pleroma* sp.
855 // N // yakushynol A // weak activity vs 1 HTCL // abs. config. estab. by Mosher's // *
856 // N // yakushynol B // weak activity vs 1 HTCL // abs. config. estab. by Mosher's // *
857 // N // yakushynol C // weak activity vs 1 HTCL // abs. config. estab. by Mosher's // *
858 // N // yakushynol D // weak activity vs 1 HTCL // abs. config. estab. by Mosher's // *
859 // N // yakushynol E // weak activity vs 1 HTCL // * // *
860 // N // yakushynol F // inactive vs 1 HTCL // * // *
861 // N // neopetroformyne E // weak activity vs 1 HTCL // * // *

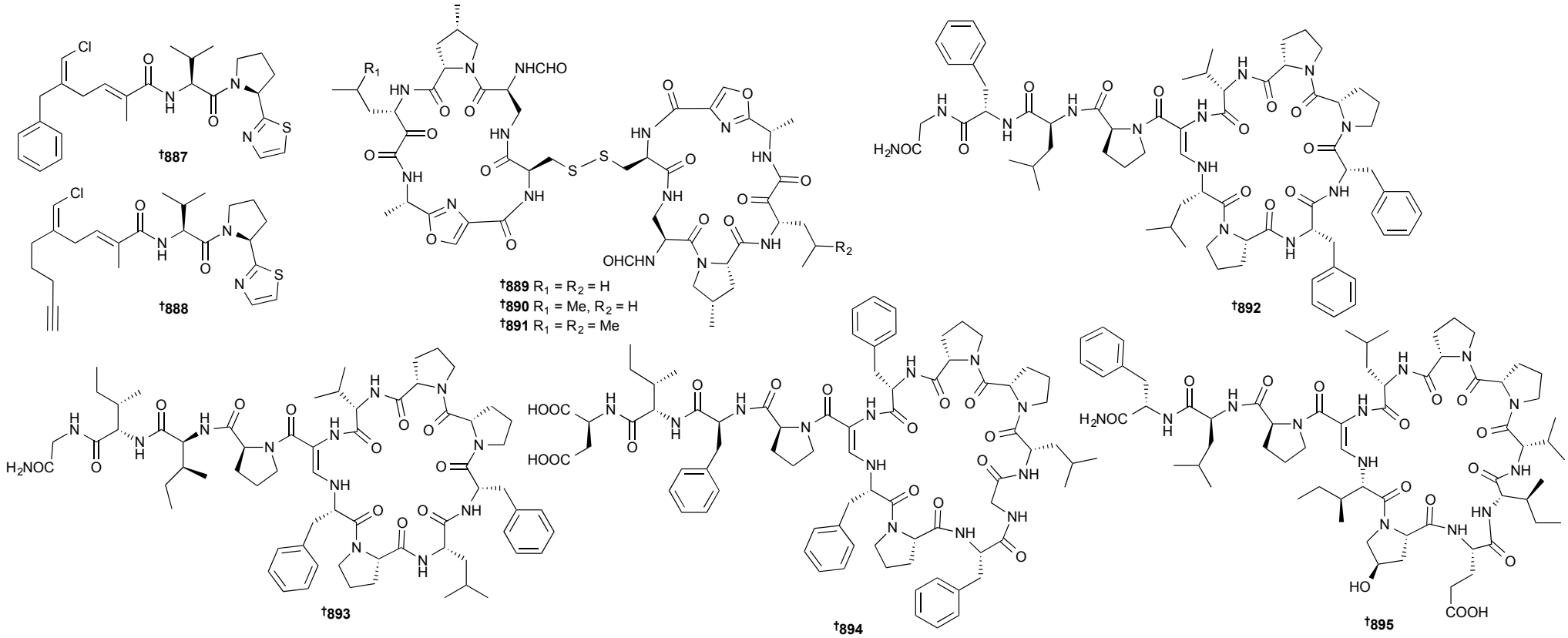
599 Porifera *Xestospongia* sp. // Sharm Obhur, Jeddah, Saudi Arabia // Two new polyacetylene derivatives from the Red Sea sponge *Xestospongia* sp.
862 // N // * // strong AM activity vs 6 strains, weak activity vs 2 HTCL // // *
863 // N // xestospongiamide // strong AM activity vs 6 strains, weak activity vs 2 HTCL // // *

600 Porifera *Spirastrella mollis* // Hogsty Reef, Bahamas // Mollenynes B–E from the marine sponge *Spirastrella mollis*. Band-selective HSQC for discrimination of bromo–chloro regioisomerism in natural products
864 // N // mollenyne B // not tested // positioning of Cl atoms from use of ^{35,37}Cl isotopic effects on ^{13}C NMR resonances // *
865 // N // mollenyne C // not tested // * // *
866 // N // mollenyne D // not tested // * // *
867 // N // mollenyne E // not tested // * // *

602 Porifera *Stelletta tenuis* // Sanya, Hainan, China // Three new cytotoxic isomalabaricane triterpenes from the marine sponge *Stelletta tenuis*
868 // M // gibepyrone C // not tested // previously isolated from *Gibberella fujikuroi,* also synthesised // **s163**
869 // M // gibepyrone F // not tested // previously isolated from *Gibberella fujikuroi* // **s163**



603 Porifera *Plakortis angulospiculatus* // Flecheiras Beach, Ceará State, Brazil // Cytotoxic plakortides from the Brazilian marine sponge *Plakortis angulospiculatus*
870 // N // 7,8-dihydroplakortide E // not tested // // *
871 // N // * // mod. active vs 4 HTCL, arrests cell cycle at G2/M phase // * // *
872 // N // 11,12-dihydroplakortide P // mod. active vs 4 HTCL. // * // *
604 Porifera *Plakortis* sp. // Discovery Bay, Jamaica // New cytotoxic cyclic peroxide acids from *Plakortis* sp. marine sponge
873 // N // plakortide I // mod. activity vs 3 HTCL // * // *
874 // N // plakortide J // mod. activity vs 3 HTCL // * // *
875 // N // plakortide K // mod. activity vs 3 HTCL // * // *
605 Porifera *Plakortis bergquistae* // N. Sulawesi, Indonesia // Manadodioxans A−E: polyketide endoperoxides from the marine sponge *Plakortis bergquistae*
876 // N // manadodioxan A // not tested // * // *
877 // N // manadodioxan B // not tested // * // *
878 // N // manadodioxan C // not tested // * // *
879 // N // manadodioxan D // inactive vs 4 microbial strains // * // *
880 // N // manadodioxan E // weak AB vs 2 microbial strains, inactive vs 2 others // * // *
606 Porifera *Plakortis simplex* // Xisha Is., China // Spiroplakortone, an unprecedented spiroketal lactone from the Chinese sponge *Plakortis simplex*
881 // N // spiroplakortone // mod. activity vs L5178Y cells. // * // *
607 Porifera // Gulf of Aqaba // New nitrogenous compounds from a Red Sea sponge from the Gulf of Aqaba
882 // N // 3-amino-1-(2-amino-4-bromophenyl)propan-1-one // inactive vs 1 HTCL // * // *
883 // M // 7-bromoquinolin-4(1*H*)-one // inactive vs 1 HTCL // previously known synthetically, see also ref. **903** in Section **9** // **s164**
608 Porifera *Verongula rigida*, *Smenospongia aurea*, *S. cerebriformis* // Key Largo, Florida // *Epi*-leptosphaerin: a new L-isoascorbic acid derivative from marine sponges
884 // M // *epi*-leptosphaerin // inactive as soluble Epoxide Hydrolase (sEH) inhib.. // likely fungal metabolite // *
609 Porifera *Euryspongia* sp. // Iriomote Is., Japan // Absolute structures and bioactivities of euryspongins and eurydiene from the marine sponge *Euryspongia* sp. collected at Iriomote Island
885 // N // eurydiene // inactive as PTP1B inhib. and vs. 3 HTCL // * // *
610 Porifera *Dragmacidon australe* // Round Reef, Whitsunday Is., Queensland // Dragmacidol A and dragmacidolide A from the Australian marine sponge *Dragmacidon australe*
886 // N // dragmacidol A // not tested // structure determination aided by DFT calcs. of NMR data // *

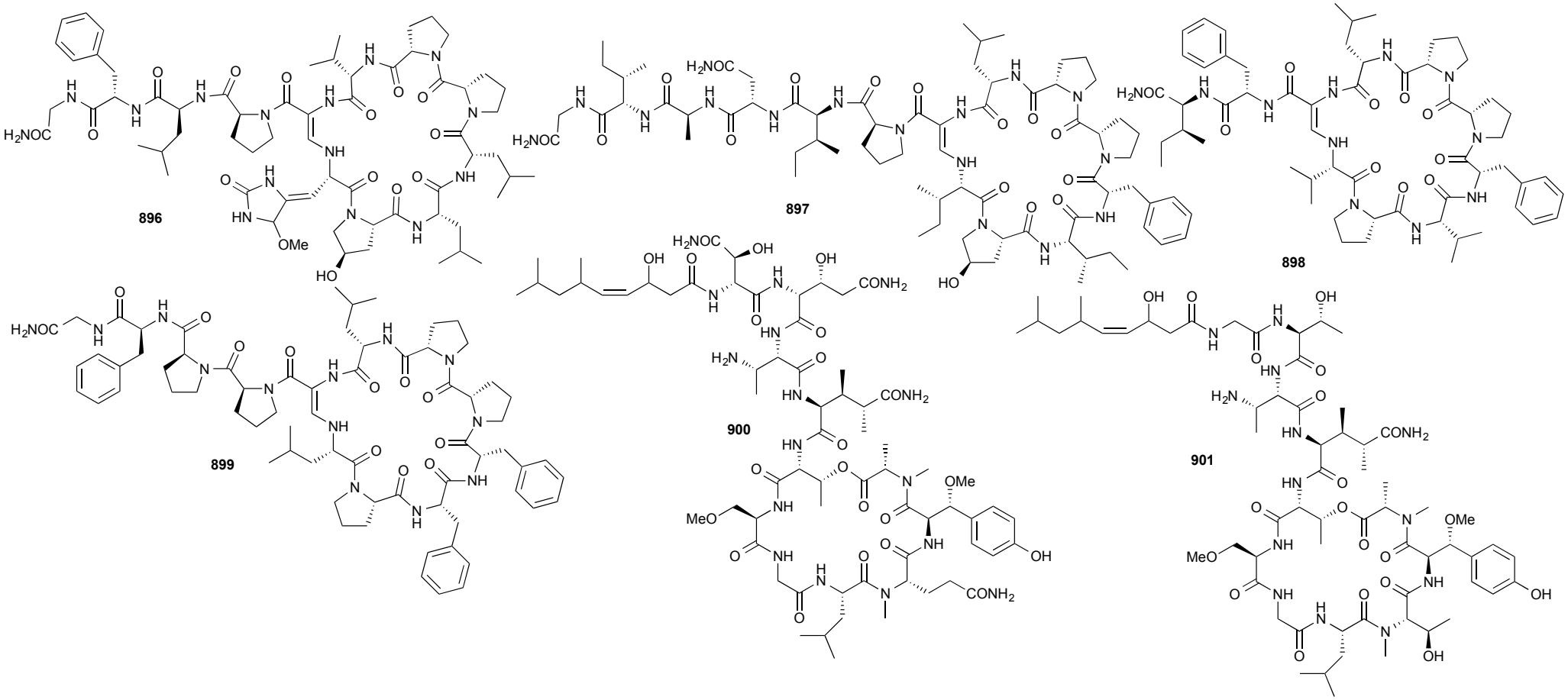


611 Porifera *Smenospongia aurea* // Little Inagua, Bahamas Is. // Isolation and assessment of the in vitro anti-tumor activity of smenothiazole A and B, chlorinated thiazole-containing peptide/polyketides from the Caribbean sponge, *Smenospongia aurea*
887 // N // smenothiazole A // pot. cytotox. activity vs. 4 HTCL, selective induction apoptosis // shares structural features with known cyanobacterial NPs; abs. config. by Marfeys // *
888 // N // smenothiazole B // pot. cytotox. activity vs. 4 HTCL, selective induction apoptosis // shares structural features with known cyanobacterial NPs; abs. config. by Marfeys // *

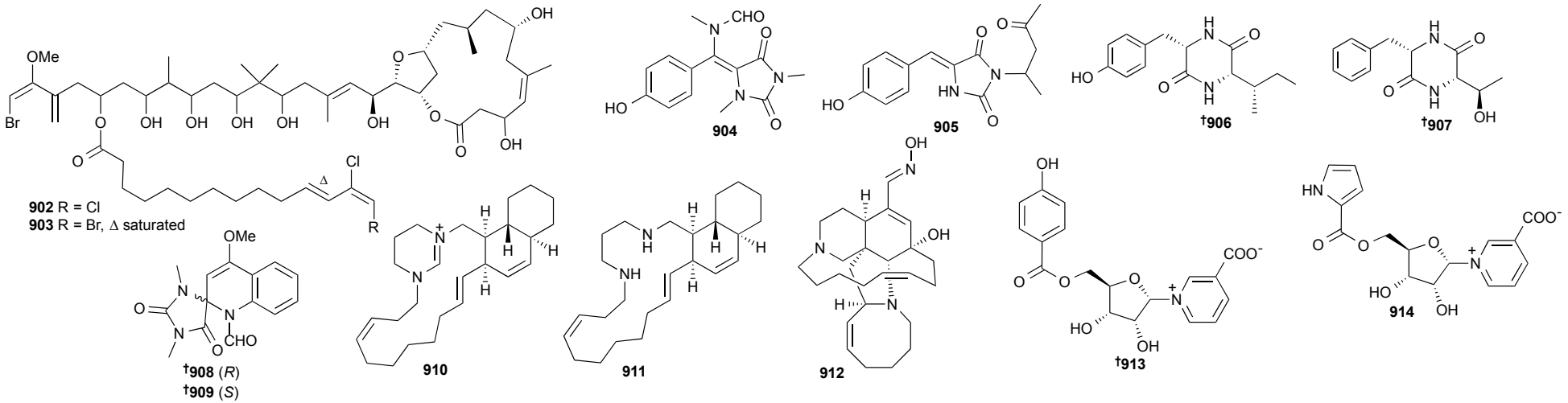
612 Porifera *Theonella swinhoei* // Hachijo Is., Japan // Nazumazoles A–C, cyclic pentapeptides dimerized through a disulfide bond from the marine sponge *Theonella swinhoei*
889 // N // nazumazole A // mixture potent (IC_{50} 0.83 µM) vs. 1 HTCL // isolated as inseperable mixture. abs. config. estab. by Marfeys // *
890 // N // nazumazole B // mixture potent (IC_{50} 0.83 µM) vs. 1 HTCL // isolated as inseperable mixture. abs. config. estab. by Marfeys // *
891 // N // nazumazole C // mixture potent (IC_{50} 0.83 µM) vs. 1 HTCL // isolated as inseperable mixture. abs. config. estab. by Marfeys // *

615 Porifera *Callyspongia aerizusa* // N. & S. Sulawesi and Maluku, Indonesia // Callyaerins from the marine sponge *Callyspongia aerizusa*: cyclic peptides with antitubercular activity
892 // N // callyaerin I // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // *
893 // N // callyaerin J // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // *
894 // N // callyaerin K // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // *
895 // N // callyaerin L // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // *

896 // N // callyaerin M // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // *****
897 // R // callyaerin D // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // **s165**
898 // R // callyaerin F // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // **s165**
899 // R // callyaerin G // inactive vs *M. tuberculosis* and 2 HTCL // abs. config. estab. by Marfeys // **s166**



616 Porifera *Stelletta* sp. // NW Coast of Australia // Stellettapeptins A and B, HIV-inhibitory cyclic depsipeptides from the marine sponge *Stelletta* sp.
900 // N // stellettapeptin A // potent HIV inhibit. (EC_{50} 23 nM in HIV-1RF infected CEM-SS T-cells), less potent cytotox. (IC_{50} 367 nM) vs host cells. // abs. config. by Marfeys // *****
901 // N // stellettapeptin B // potent HIV inhibit. (EC_{50} 27 nM in HIV-1RF infected CEM-SS T-cells), less potent cytotox. (IC_{50} 373 nM) vs host cells. // abs. config. by Marfeys // *****



618 Porifera, Petrosid sponge // Pemba, Tanzania // Phormidolides B and C, cytotoxic agents from the sea: enantioselective synthesis of the macrocyclic core
902 // N // phormidolide B // mod. activity vs 3 HTCL // three macrocyclic cores synthesised to ID structure // *
903 // N // phormidolide C // mod. activity vs 3 HTCL // three macrocyclic cores synthesised to ID structure // *

619 Porifera *Hemimycale arabica* // Jazan, Saudi Arabia // Bioactive hydantoin alkaloids from the Red Sea marine sponge *Hemimycale arabica*
904 // N // hemimycalin A // weak activity vs 1 HTCL and 3 microbial strains // * // *
905 // N // hemimycalin B // weak activity vs 1 HTCL and 3 microbial strains // * // *

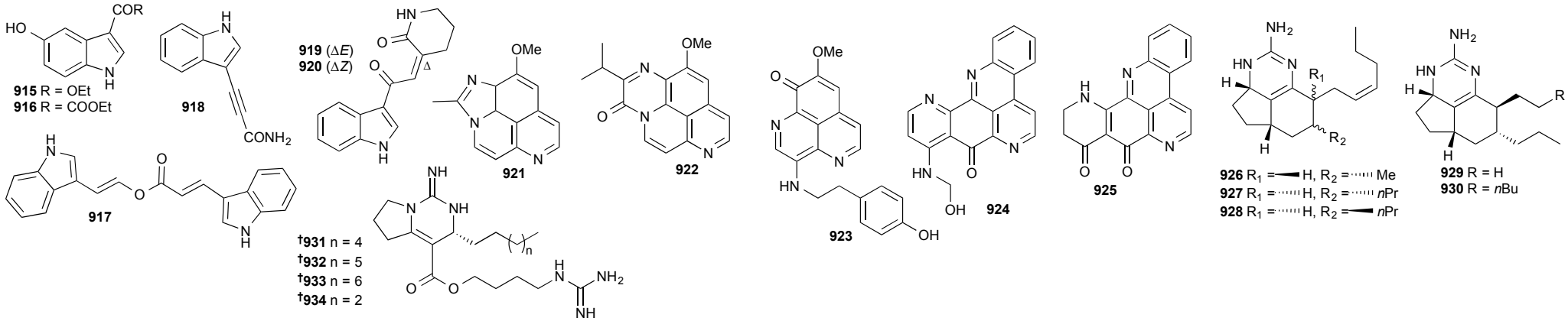
620 Porifera *Acanthella cavernosa* // Vanua Levu, Fiji // Marine natural occurring 2,5-diketopiperazines: isolation, synthesis and optical properties
906 // N // cyclo(L-Tyr-L-Ile) // not tested // comprehensive chiroptical study on 7 diketopiperazines undertaken // *
907 // N // cyclo(L-Phe-L-Thr) // not tested // comprehensive chiroptical study on 7 diketopiperazines undertaken // *

621 Porifera *Fascaplysinopsis reticulata* // Xisha Is., China // (+)- and (−)-Spiroreticulatine, a pair of unusual spiro bisheterocyclic quinoline-imidazole alkaloids from the S. China Sea sponge *Fascaplysinopsis reticulata*
908 // N // (+)-spiroreticulatine // not cytotox., inhibit. IL2 secretion at 15 μM // * // *
909 // N // (–)-spiroreticulatine // not cytotox., inhibit. IL2 secretion but less active than (+) enantiomer // * // *

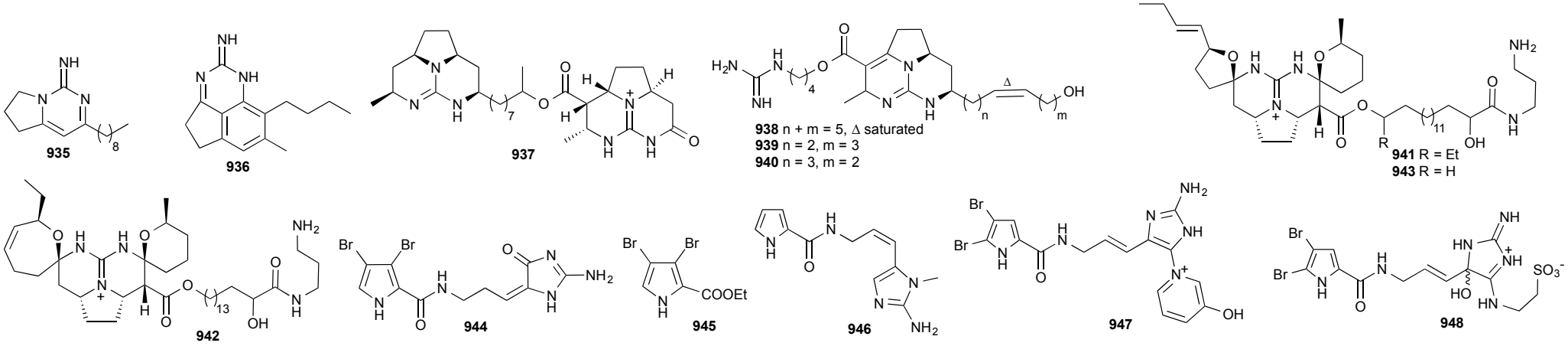
622 Porifera *Neopetrosia exigua* // Old Derawan Pier, Kalimantan, Indonesia // Neopetrocyclamines A and B, polycyclic diamine alkaloids from the sponge *Neopetrosia* cf *exigua*
910 // N // neopetrocyclamine A // inactive vs 3 HTCL // * // *
911 // N // neopetrocyclamine B // inactive vs 3 HTCL // * // *

623 Porifera *Acanthostrongylophora ingens* // Ambon, Indonesia // Ircinal E, a new manzamine derivative from the Indonesian marine sponge *Acanthostrongylophora ingens*
912 // N // ircinal E // weak activity vs 1 HTCL // * // *

624 Porifera *Neopetrosia* sp. // Con Son Is., Vietnam // Pyridine nucleosides neopetrosides A and B from a marine *Neopetrosia* sp. sponge. Syn. of neopetroside A and its β-riboside analogue
913 // N // neopetroside A // non toxic to C2C12 cells up to 100 μM, upregulates mitochondrial functions at 10 μM // total synthesis also achieved // *
914 // N // neopetroside B // not tested // * // *



625 Porifera *Ircinia* sp. // Iriomote Is., Okinawa, Japan // Two new indole derivatives from a marine sponge *Ircinia* sp. collected at Iriomote Island
915 // M // 5-hydroxy-1*H*-indole-3-carboxylic acid ethyl ester // inactive vs *M. smegmatis* // * // **s167**
916 // N // 5-hydroxy-1*H*-indole-3-glyoxylate ethyl ester // inactive vs *M. smegmatis* // * // *
626 Porifera *Plakortis* sp. // Zampa, Okinawa, Japan // New indole alkaloids from the sponge *Plakortis* sp.
917 // N // * // inactive vs 2 HTCL // * // *
918 // N // * // weak activity vs 2 HTCL // * // *
627 Porifera *Spongia* sp. // Tong-Yong City, S. Korea // Two indole-alkaloids from a Korean marine sponge *Spongia* sp.
919 // N // * // inactive vs the Farnesoid X-activated Receptor (FXR) and 1 monkey kidney cell line // * // *
920 // N // * // inactive vs the Farnesoid X-activated Receptor (FXR) and 1 monkey kidney cell line // * // *
628 Porifera *Aaptos aaptos* // Yongxing Is., S. China Sea // Three new aaptamine derivatives from the South China Sea sponge *Aaptos aaptos*
921 // N // * // mod. activity vs 2 HTCL // * // *
922 // N // * // not tested // * // *
923 // N // 3-(*p*-hydroxyl-phenethylamino)demethyl(oxy)aaptamine // not tested // * // *
631 Porifera *Biemna* sp. // Oshima-Shinsone seamount (-162 m), Japan // Two cell differentiation inducing pyridoacridines from a marine sponge *Biemna* sp. and their chemical conversions
924 // N // *N*-hydroxymethylisocystodamine // induced 36% neuronal cell differentiation at 5 ng/mL // * // *
925 // R // neolabuanine A // induced 53% neuronal cell differentiation at 50 ng/mL // structure originally assigned to labuanine A, which is actually ecionine A // **s168**
632 Porifera *Biemna laboutei* // Salary Bay, Madagascar // Netamines O–S, 5 new tricyclic guanidine alkaloids from the Madagascar sponge *Biemna laboutei*, and their antimalarial activities
926 // N // netamine O // weak activity vs 1 HTCL and *P. falciparum* // * // *
927 // N // netamine P // weak activity vs 1 HTCL and *P. falciparum* // * // *
928 // N // netamine Q // weak activity vs 1 HTCL and mod. vs *P. falciparum* // * // *
929 // N // netamine R // not tested // * // *
930 // N // netamine S // not tested // * // *
633 Porifera *Pseudaxinella reticulata* // Sweetings Cay, Bahamas // Antipodal crambescin A2 homologues from the marine sponge *Pseudaxinella reticulata*. Antifungal SAR
931 // N // (+)-crambescin A2 392 // AF vs 4 strains // * // *
932 // N // (+)-crambescin A2 406 // AF vs 4 strains // * // *
933 // N // (+)-crambescin A2 420 // AF vs 4 strains // * // *
934 // N // (+)-Sch 575948 // AF vs 4 strains // * // *



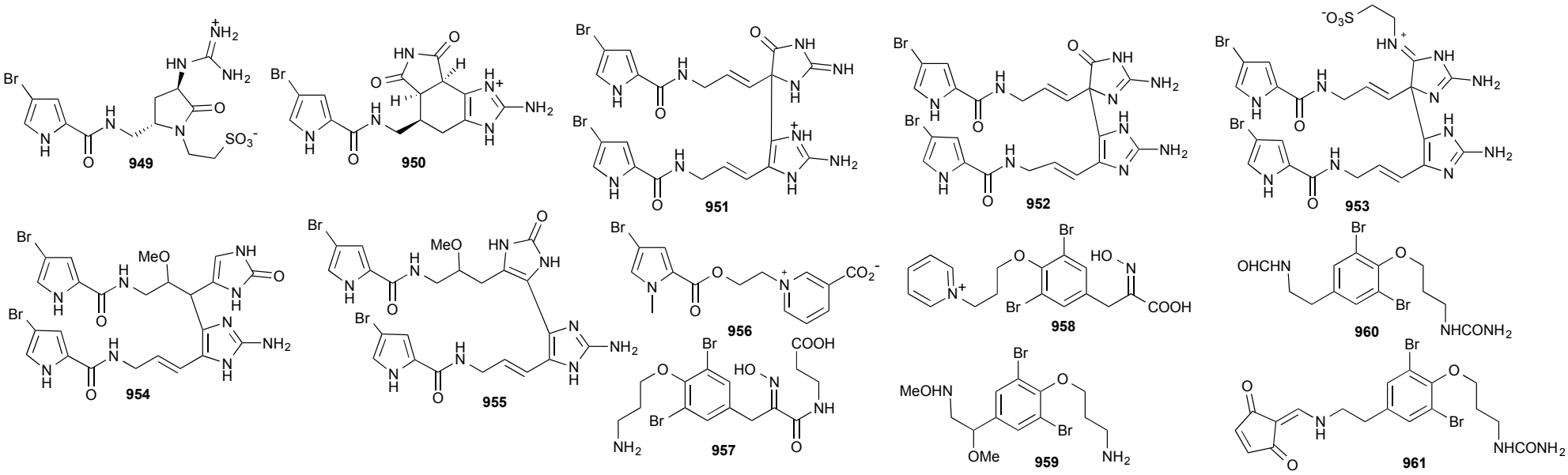
634 Porifera *Monanchora arbuscula* // Cabo Frio, Brazil // Anti-parasitic guanidine and pyrimidine alkaloids from the marine sponge *Monanchora arbuscula*
935 // N // monalidine A // mod. anti-leishmanial (IC_{50} 8 μM), anti-trypanosomal (IC_{50} 2 μM) and cytotox. vs 1 HTCL // total synthesis also achieved // *
936 // N // arbusculidine A // not tested // * // *
937 // N // batzellamide A // not tested // * // *
938 // N // hemibatzelladine J // not tested // * // *
939 // N // Δ19-hemibatzelladine J // not tested // * // *
940 // N // Δ20-hemibatzelladine J // not tested // * // *

635 Porifera *Monanchora pulchra* // Urup Is., Russia // Normonanchocidins A, B and D, new pentacyclic guanidine alkaloids from the Far-Eastern marine sponge *Monanchora pulchra*
941 // N // normonanchocidin A // mod. activity vs 2 HTCL // * // *
942 // N // normonanchocidin B // mod. activity vs 2 HTCL in 1:1 mix with A28880/3 // * // *
943 // N // normonanchocidin D // mod. activity vs 2 HTCL in 1:1 mix with A28880/2 // * // *

636 Porifera *Stylissa massa* // Papua Is. // Dispacamide E and other bioactive bromopyrrole alkaloids from two Indonesian marine sponges of the genus *Stylissa*
944 // N // dispacamide E // inactive vs L5178Y, inactive to potent inhibit. of nine protein kinases // * // *
945 // M // ethyl 3,4-dibromo-1*H*-pyrrole-2-carboxylate // not tested // known synthetically // **s169**

637 Porifera *Agelas* cf. mauritiana // N. Guadalcanal reefs, Solomon Is. // Debromokeramadine from the sponge *Agelas* cf. *mauritiana:* isolation and short regioselective and flexible synthesis
946 // N // debromokeramadine // not tested // structure also confirmed by synthesis // *

638 Porifera *Agelas* sp. // Kerama Is., Okinawa // Agelamadin F and tauroacidin E, bromopyrrole alkaloids from an Okinawan marine sponge *Agelas* sp.
947 // N // agelamadin F // inactive vs 2 HTCL // * // *
948 // N // tauroacidin E // inactive vs 2 HTCL // isolated as racemate // *

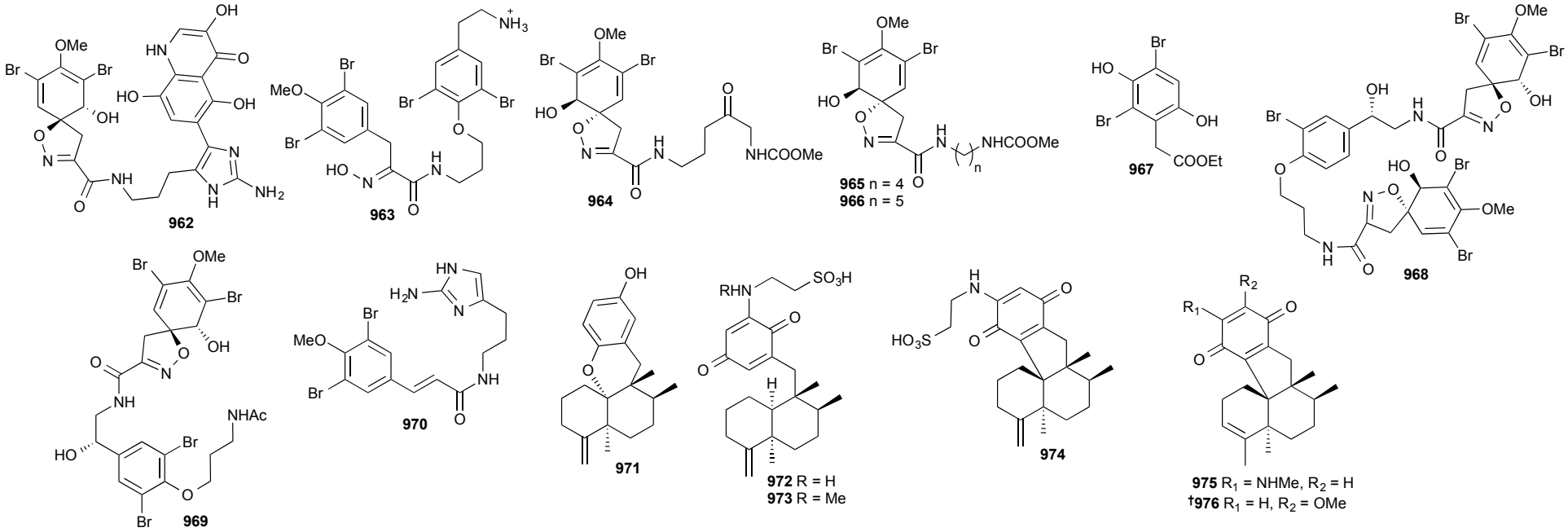


639 Porifera *Agelas* sp. // Kerama Is., Okinawa, Japan // 2-Debromonagelamide U, 2-debromomukanadin G, and 2-debromonagelamide P from marine sponge *Agelas* sp.
949 // N // 2-debromonagelamide U // weak AM activity // * // *
950 // N // 2-debromomukanadin G // weak AM activity // * // *
951 // N // 2-debromonagelamide P // weak AM activity // * // *

640 Porifera *Agelas citrina* // San Salvador, The Bahamas // The marine sponge *Agelas citrina* as a source of the new pyrrole–imidazole alkaloids citrinamines A–D and N-methylagelongine
952 // N // citrinamine A // inactive against 5 microbial strains and 1 mouse cancer cell line // * // *
953 // N // citrinamine B // some AM activity in disk diffusion assay (zone not listed), inactive vs. 1 mouse cancer cell line // * // *
954 // N // citrinamine C // some AM activity in disk diffusion assay (zone not listed), inactive vs. 1 mouse cancer cell line // * // *
955 // N // citrinamine D // some AM activity in disk diffusion assay (zone not listed), inactive vs. 1 mouse cancer cell line // * // *
956 // N // *N*-methylagelongine // inactive against 5 microbial strains and 1 mouse cancer cell line // * // *

641 Porifera order Verongida // Kerama Is., Okinawa, Japan // Tyrokeradines G and H, new bromotyrosine alkaloids from an Okinawan Verongid sponge
957 // N // tyrokeradine G // weak AF activity // * // *
958 // N // tyrokeradine H // weak AF activity // * // *

642 Porifera *Pseudoceratina arabica* // Anas Reef, Obhur, Saudi Arabia // Bioactive alkaloids from the Red Sea marine Verongid sponge *Pseudoceratina arabica*
959 // N // ceratinine F // weak inhbit. cell migration in wound healing assay at 10 µM, weak cytotox. vs HTCL // * // *
960 // N // ceratinine G // weak inhbit. cell migration in wound healing assay at 10 µM, weak cytotox. vs HTCL // * // *
961 // N // ceratinine H // not tested // * // *



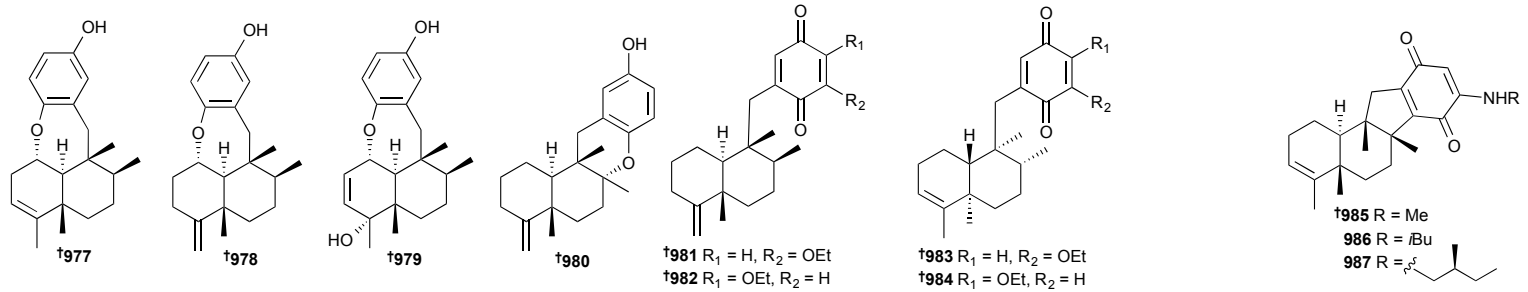
643 Porifera *Pseudoceratina purpurea* // Jervis Bay, Australia // New antimicrobial bromotyrosine analogues from the sponge *Pseudoceratina purpurea* and its predator *Tylodina corticalis*
962 // N // (+)-ceratinadin D // inactive vs 2 microbial strains // * // *
963 // N // aplysamine 8 // weak AM activity // * // *

644 Porifera *Acanthodendrilla* sp. // Koh-Ha Islets, Krabi, Thailand // Bromotyrosine alkaloids with acetylcholinesterase inhibitory activity from the Thai sponge *Acanthodendrilla* sp.
964 // N // 13-oxosubereamolline D // not tested // * // *

645 Porifera *Suberea* sp. // Yanbu, Saudi Arabia // Bioactive secondary metabolites from the Red Sea marine verongid sponge *Suberea* species
965 // N // subereamolline C // inactive vs 2 HTCL // * // *
966 // N // subereamolline D // inactive vs 2 HTCL // * // *
967 // R // subereaphenol C // mod. activity vs 1 HTCL // * // **s170**

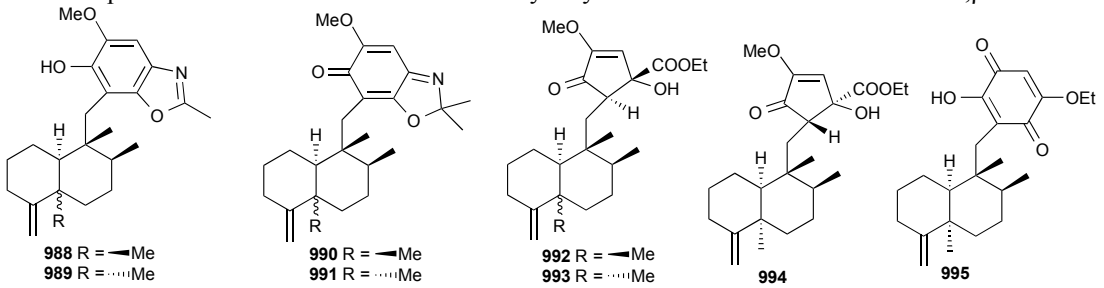
646 Porifera *Aplysina lacunosa* // Stirrup Cay, The Bahamas // Bromotyrosine-derived alkaloids from the Caribbean sponge *Aplysina lacunosa*
968 // N // 14-debromo-11-deoxyfistularin-3 // weak activity vs 1 HTCL // 1,1-ADEQUATE used to assign carbon connectivity // *
969 // N // aplysinin A // weak activity vs 3 HTCL // 1,1-ADEQUATE used to assign carbon connectivity // *
970 // N // aplysinin B // not tested // * // *

647 Porifera *Dysidea* sp. // Chuuk Is., Federated States of Micronesia // Meroterpenoids from a tropical *Dysidea* sp. sponge
971 // N // aureol B // mod. activity vs 2 HTCL, strong AB vs 6 strains // * // *
972 // N // melemeleone C // mod. activity vs 2 HTCL, weak AB vs 6 strains // * // *
973 // N // melemeleone D // mod. activity vs 2 HTCL, weak AB vs 6 strains // * // *
974 // N // cycloaurenone A // mod. activity vs 2 HTCL, weak AB vs 6 strains // * // *
975 // N // cycloaurenone B // mod. activity vs 2 HTCL, weak AB vs 6 strains // * // *
976 // N // cycloaurenone C // strong activity vs 2 HTCL, weak AB vs 6 strains // * // *

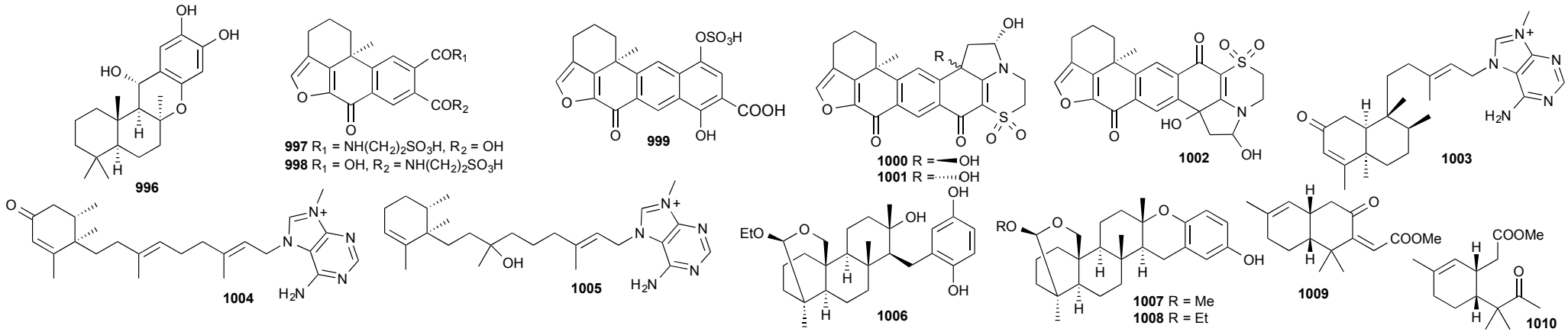


648 Porifera *Dysidea avara* // Xisha Is., S. China Sea // Bioactive sesquiterpene quinols and quinones from the marine sponge *Dysidea avara*
977 // N // dysiquinol A // weak activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
978 // N // dysiquinol B // weak activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
979 // N // dysiquinol C // mod. activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
980 // N // dysiquinol D // mod. activity vs 1 HTCL, strong inhibit. of NF-kB // abs. config. estab. from ECD measurements // *
981 // N // (5*S*,8*S*,9*R*,10*S*)-18-ethoxyneoavarone // mod. activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
982 // N // (5*S*,8*S*,9*R*,10*S*)-19-ethoxyneoavarone // weak activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
983 // N // (5*R*,8*R*,9*S*,10*R*)-18-ethoxyavarone // weak activity vs 1 HTCL // abs. config. estab. from ECD measurements // *
984 // N // (5*R*,8*R*,9*S*,10*R*)-19-ethoxyavarone // weak activity vs 1 HTCL // abs. config. estab. from ECD measurements // *

649 Porifera *Dysidea fragilis* // Yongxing Is., S. China Sea // Dysifragilones A–C, unusual sesquiterp. aminoquinones and inhibs. of NO production from the S. China Sea sponge *D. fragilis*
985 // N // dysifragilone A // mod. inhibit. of NO production in RAW264.7 cells // activity may be linked to Micahel addition to α,β-unsaturated ketone // *
986 // N // dysifragilone B // mod. inhibit. of NO production in RAW264.7 cells // activity may be linked to Micahel addition to α,β-unsaturated ketone // *
987 // N // dysifragilone C // mod. inhibit. of NO production in RAW264.7 cells // activity may be linked to Micahel addition to α,β-unsaturated ketone // *



650 Porifera *Smenospongia aurea, S. cerebriformis*, *Verongula rigida* // Key Largo, Florida // Cytotoxic activity of rearranged drimane meroterpenoids against colon cancer cells via down-regulation of β-catenin expression
988 // N // (–)-nakijinol E // not tested // produced by exposing *Smenospongia* to homogensied *Verongula rigida*, a strongly oxidative sponge matrix // *
989 // N // (+)-5-*epi*-nakijinol E // mod. activity vs 2 HTCL, inhib. β-catenin as MOA // produced by exposing *Smen.* to homogensied *V. rigida*, a strongly oxidative sponge matrix // *
990 // N // nakijinone A // mod. activity vs 2 HTCL, inhib. β-catenin as MOA // produced by exposing *Smen.* to homogensied *V. rigida*, a strongly oxidative sponge matrix // *
991 // N // 5-*epi*-nakijinone A // mod. activity vs 2 HTCL, inhib. β-catenin as MOA // produced by exposing *Smen.* to homogensied *V. rigida*, a strongly oxidative sponge matrix // *
992 // N // (–)-dactylospongenone E // not tested // produced by exposing *Smenospongia* to homogensied *Verongula rigida*, a strongly oxidative sponge matrix // *
993 // N // 5-*epi*-dactylospongenone E // not tested // produced by exposing *Smenospongia* to homogensied *Verongula rigida*, a strongly oxidative sponge matrix // *
994 // N // 5-*epi*-dactylospongenone F // not tested // produced by exposing *Smenospongia* to homogensied *Verongula rigida*, a strongly oxidative sponge matrix // *
995 // N // (+)-5-*epi*-20-*O*-ethylsmenoquinone // mod. activity vs 2 HTCL, inhib. β-catenin // produced by exposing *Smen.* to homogensied *V. rigida*, a strongly oxid. sponge matrix // *



652 Porifera *Dactylospongia* sp. // Au'au Channel, (-130 m) Hawaii // Puupehenol, a potent antioxidant antimicrobial meroterpenoid from a Hawaiian deep-water *Dactylospongia* sp. sponge
996 // N // puupehenol // potent antioxidant and mod. AM vs *S. aureus* and *B. cereus* // exposure to mild acid and elevated temperatures converts compound to puupehenone // *

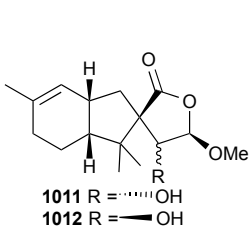
653 Porifera *Xestospongia* sp. // Manado, N. Sulawesi, Indonesia // Novel adociaquinone derivatives from the Indonesian sponge *Xestospongia* sp.
997 // N // xestoadociaquinone A // not tested // * // *
998 // N // xestoadociaquinone B // not tested // * // *
999 // N // 14-carboxy-xestoquinol sulfate // not tested // * // *
1000 // N // xestoadociaminal A // not tested // * // *
1001 // N // xestoadociaminal B // not tested // * // *
1002 // N // xestoadociaminal C/D // not tested // * // *

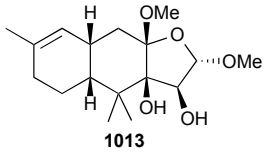
654 Porifera *Agelas nakamurai* // Iriomote Is., Japan // Structures and biological evaluations of agelasines isolated from the Okinawan marine sponge *Agelas nakamurai*
1003 // N // 2-oxoagelasine A // inactive as PTP1B inhib. and vs 2 HTCL // * // *
1004 // N // 2-oxoagelasine F // inactive as PTP1B inhib. and vs 2 HTCL // * // *
1005 // N // 10-hydro-9-hydroxyagelasine F // inactive as PTP1B inhib. and vs 2 HTCL // * // *

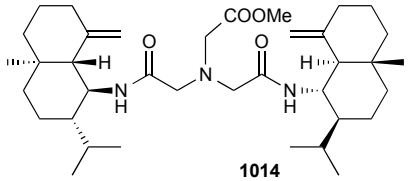
655 Porifera *Strongylophora strongylata*, *Petrosia strongylata* // Iriomote Is., Okinawa, Japan // Strongylophorines, new protein tyrosine phosphatase 1B inhibitors, from the marine sponge *Strongylophora strongilata* collected at Iriomote Island
1006 // N // 26-*O*-ethylstrongylophorine-14 // inhibit. PTP1B; IC_{50} 8.7 μM) // assumed NP due to isolation of other strongylophorine ethyl ethers previously // *

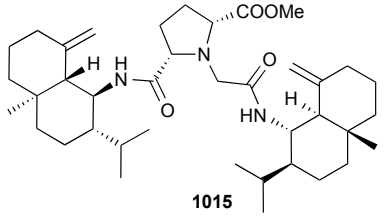
656 Porifera *Petrosia corticata* // N. Sulawesi, Indonesia // Strongylophorines, meroditerpenoids from the marine sponge *Petrosia corticata*, function as proteasome inhibitors
1007 // N // 26-*O*-methylstrongylophorine-16 // mod. (IC_{50} 6.6 μM) inhibit. of chymotrypsin-like activity of proteasome // not an artefact of isolation // *
1008 // N // 26-*O*-ethylstrongylophorine-16 // mod. (IC_{50} 9.3 μM) inhibit. of chymotrypsin-like activity of proteasome // not an artefact of isolation // *

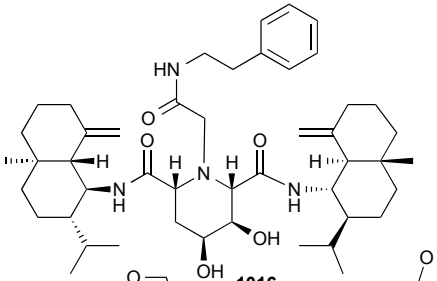
657 Porifera *Dysidea fragilis* // Vandon, Quangninh, Vietnam // Sesquiterpenes from the Vietnamese marine sponge *Dysidea fragilis*
1009 // N // dysidinin A // inactive vs 2 HTCL // * // *
1010 // N // dysidinin B // inactive vs 2 HTCL // * // *

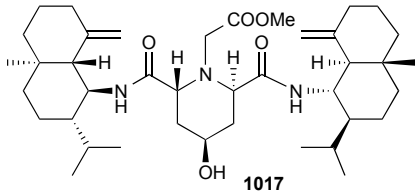


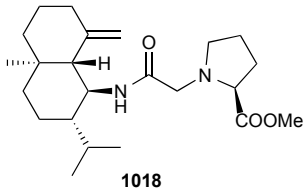


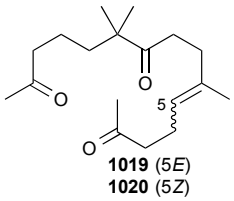


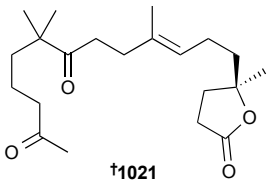


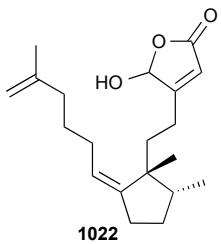


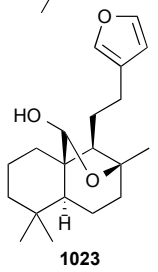


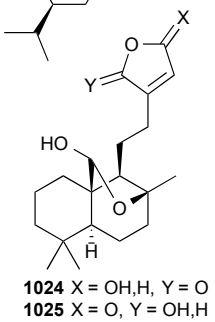












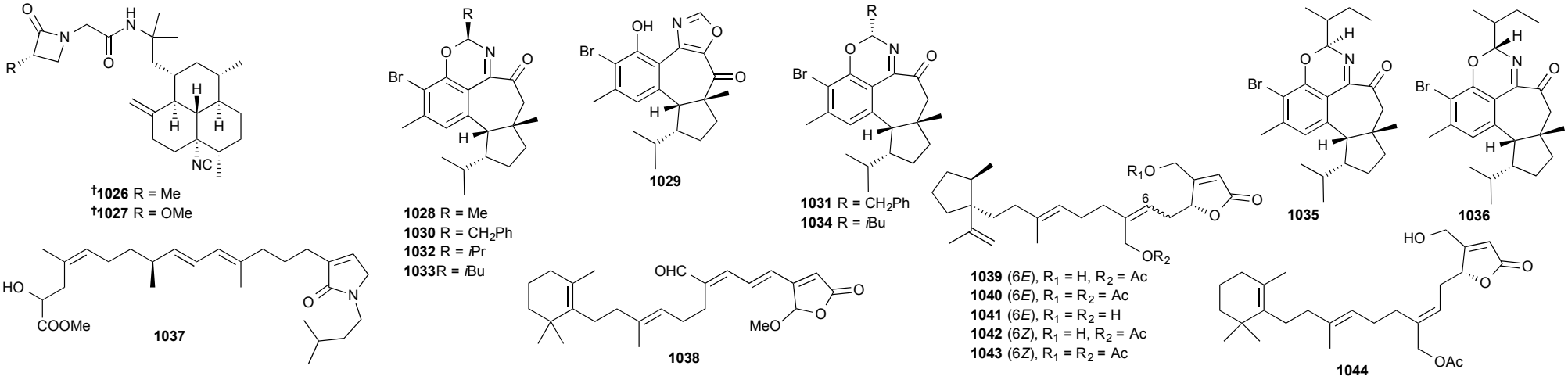
658 Porifera *Dysidea fragilis* // Vandon, Quangninh, Vietnam // ^{1}H and ^{13}C NMR assignments of sesquiterpenes from *Dysidea fragilis*
1011 // N // dysinidin I // not tested // * // *
1012 // N // dysinidin II // not tested // * // *
1013 // N // dysinidin III // not tested // * // *

659 Porifera *Halichondria* sp. // Unten Port, Okinawa, Japan // Halichonadins M–Q, sesquiterpenes from an Okinawan marine sponge *Halichondria* sp.
1014 // N // halichonadin M // inactive vs 3 microbial strains // * // *
1015 // N // halichonadin N // not tested // * // *
1016 // N // halichonadin O // low µg/mL activity vs 3 microbial strains // * // *
1017 // N // halichonadin P // not tested // * // *
1018 // N // halichonadin Q // not tested // * // *

660 Porifera *Diacarnus megaspinorhabdosa* // Yongxing Is., Hainan, China // New metabolites from the South China Sea sponge *Diacarnus megaspinorhabdosa*
1019 // N // * // inactive vs 5 HTCL // * // *
1020 // N // * // inactive vs 5 HTCL // * // *
1021 // N // diacarlactone A // weak activity vs 5 HTCL // * // *

661 Porifera *Niphates olemda* // Mantehage, Indonesia // Niphateolide A: isolation from the marine sponge *Niphates olemda* and determination of abs. config. by an ECD analysis
1022 // N // niphateolide A // inhib. p53-Mdm2 interaction (IC_{50} 16 µM) // // *

662 Porifera order Dictyoceratida // Eua Is., Tonga // Luakuliides A–C, cytotoxic labdane diterpenes from a Tongan dictyoceratid sponge
1023 // N // luakuliide A // weak activity vs 1 HTCL // * // *
1024 // N // luakuliide B // weak activity vs 1 HTCL // * // *
1025 // N // luakuliide C // not tested // * // *



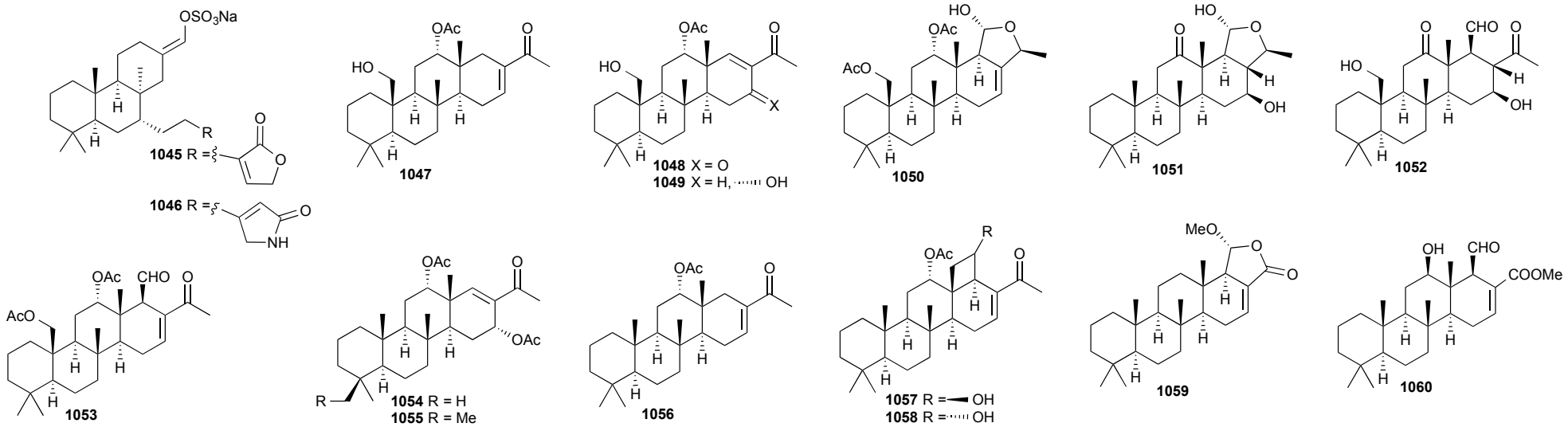
663 Porifera *Svenzea flava* // Mona Is., Puerto Rico // Structures, semisynth., and abs. config. of the antiplasmodial α-substituted β-lactam monamphilectines B and C from *Svenzea flava*
1026 // N // monamphilectine B // potent antimalarial (IC_{50} 44.5 nM vs non-resistant *P. falciparum*) // abs. config. achieved by asymmetric total synthesis // *
1027 // N // monamphilectine C // potent antimalarial (IC_{50} 43.3 nM vs non-resistant *P. falciparum*) // abs. config. achieved by asymmetric total synthesis // *

664 Porifera *Hamigera tarangaensis* // Cavalli Is., New Zealand // The nitrogenous hamigerans: unusual amino acid-derivatized aromatic diterpenoid metabolites from the New Zealand marine sponge *Hamigera tarangaensis*
1028 // R // hamigeran D // mod. cytotox. vs HL-60 // revised and consisent with previously reported X-ray // **s171**
1029 // N // hamigeran M // mod. cytotox. vs HL-60 // * // *
1030 // N // hamigeran N // mod. cytotox. vs HL-60 // * // *
1031 // N // 18-*epi*-hamigeran N // mod. cytotox. vs HL-60 // * // *
1032 // N // hamigeran O // mod. cytotox. vs HL-60 // * // *
1033 // N // hamigeran P // mod. cytotox. vs HL-60 // * // *
1034 // N // 18-*epi*-hamigeran P // mod. cytotox. vs HL-60 // * // *
1035 // N // hamigeran Q/19-*epi*-hamigeran Q // mod. cytotox. vs HL-60 // incorporation of (prokaryotic) *allo*-isoleucine implies mixed sponge/microbial biosynthesis // *
1036 // N // 18-*epi*-hamigeran Q // not tested // incorporation of (prokaryotic) *allo*-isoleucine implies mixed sponge/microbial biosynthesis // *

665 Porifera *Sarcotragus* sp. // Chuja-do, S. Korea // A new sesterterpene from the Korean *Sarcotragus* sp. sponge
1037 // N // sarcotragin C // weak activity vs 2 HTCL // * // *

666 Porifera *Luffariella variabilis* // Sepanggar Is., Sabah, Malaysia // Manoalide-related sesterterpene from the marine sponge *Luffariella variabilis*
1038 // N // (4*E*,6*E*)-dehydro-25-*O*-methylmanoalide // mod. activity vs 1 HTCL // possible artefact of isolation // *

667 Porifera *Luffariella* sp. // Pingtung County, Taiwan // Cytotoxic monocarbocyclic sesterterpenoids from a marine sponge *Luffariella* sp.
1039 // N // luffalide A // inactive vs 5 HTCL // * // *
1040 // N // luffalide B // inactive vs 5 HTCL // * // *
1041 // N // luffalide C // inactive vs 5 HTCL // * // *
1042 // N // luffalide D // inactive vs 5 HTCL // * // *
1043 // N // luffalide E // mod. activity vs 2 HTCL // * // *
1044 // N // luffalide F // inactive vs 5 HTCL // * // *



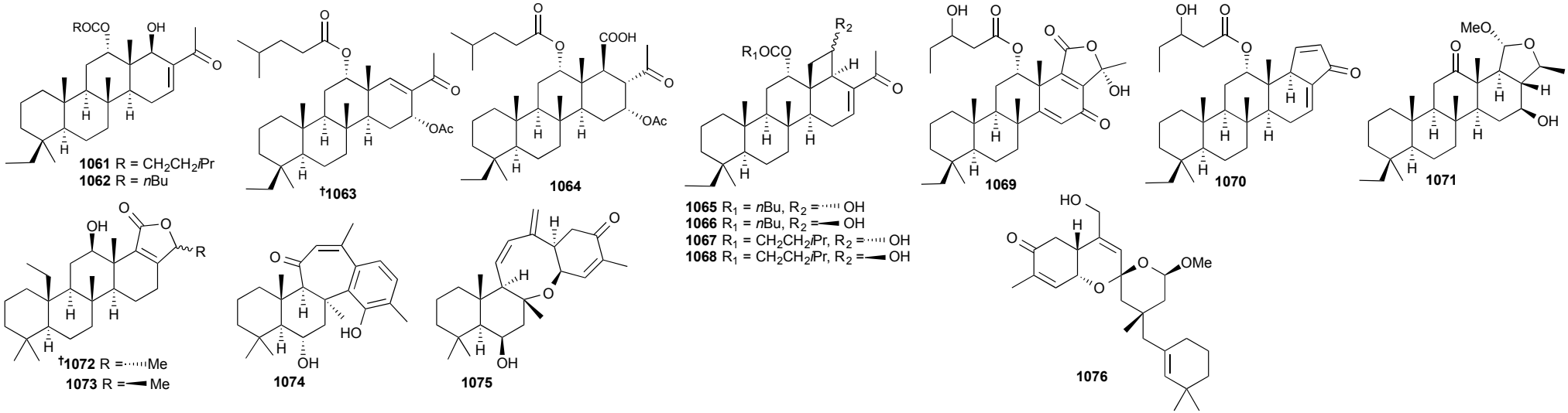
668 Porifera *Coscinoderma* sp. // Chuuk, Federated States of Micronesia // Suvanine analogs from a *Coscinoderma* sp. marine sponge and their cytotoxicities against human cancer cell lines
1045 // N // * // weak activity vs 2 HTCL, inactive vs 4 HTCL // * // *
1046 // N // * // inactive vs 6 HTCL // * // *

669 Porifera *Ircinia felix* // S. Taiwan // New scalarane sesterterpenoids from the Formosan sponge *Ircinia felix*
1047 // N // felixin A // weak activity vs 6 HTCL // * // *
1048 // N // felixin B // weak activity vs 6 HTCL // * // *
1049 // N // felixin C // weak activity vs 6 HTCL // * // *
1050 // N // felixin D // weak activity vs 6 HTCL // * // *
1051 // N // felixin E // weak activity vs 6 HTCL // * // *

670 Porifera *Ircinia felix* // S. Taiwan // New cytotoxic 24-homoscalarane sesterterpenoids from the sponge *Ircinia felix*
1052 // N // felixin F // mod. activity vs 6 HTCL // * // *
1053 // N // felixin G // weak activity vs 6 HTCL // * // *

671 Porifera *Phyllospongia lamellosa* // Shaab Saad, Northern Hurghada, Egypt // Scalarane sesterterpenes from the Egyptian Red Sea sponge *Phyllospongia lamellosa*
1054 // N // phyllospongin A // mod. activity vs. 3 HTCL and 3 of 4 bacterial strains // * // *
1055 // N // phyllospongin B // mod. activity vs. 3 HTCL and 3 of 4 bacterial strains // * // *
1056 // N // phyllospongin C // mod. activity vs. 2 HTCL and 3 of 4 bacterial strains // * // *
1057 // N // phyllospongin D // mod. activity vs. 3 HTCL and 3 of 4 bacterial strains // * // *
1058 // N // phyllospongin E // mod. activity vs. 3 HTCL and 3 of 4 bacterial strains // * // *

672 Porifera *Spongia* sp. // Geoje Is., S. Korea // Two new scalaranes from a Korean marine sponge *Spongia* sp.
1059 // N // * // inactive as Farnesoid X-activated Receptor (FXR) agonist // absence of C-23 oxidation may account for lack of FXR-antagonistic activity // *
1060 // N // * // inactive as Farnesoid X-activated Receptor (FXR) agonist // absence of C-23 oxidation may account for lack of FXR-antagonistic activity // *

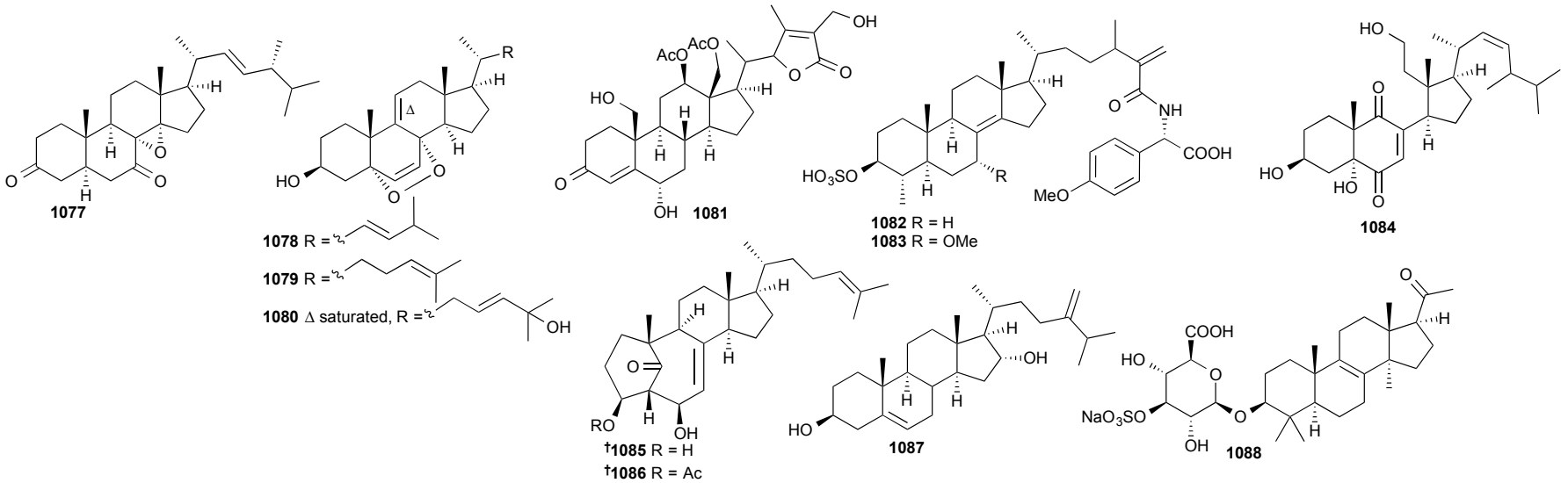


673 Porifera *Carteriospongia foliascens* // Dongluoxigu Is., Sanya, China // Cytotoxic scalarane sesterterpenoids from the South China Sea sponge *Carteriospongia foliascens*
1061 // N // carteriofenone A // mixed with **1062** and **1063,** mod. activity vs. 3 HTCL // * // *
1062 // N // carteriofenone B // mixed with **1061** and **1063,** mod. activity vs. 3 HTCL // * // *
1063 // N // carteriofenone C // mixed with **1061** and **1062,** mod. activity vs. 3 HTCL // abs. config. estab. by Mosher's // *
1064 // N // carteriofenone D // mod. activity vs. 3 HTCL // * // *
1065 // N // carteriofenone E // mod. activity vs. 3 HTCL // * // *
1066 // N // carteriofenone F // mod. activity vs. 3 HTCL // * // *
1067 // N // carteriofenone G // mod. activity vs. 3 HTCL // * // *
1068 // N // carteriofenone H // mod. activity vs. 3 HTCL // * // *
1069 // N // carteriofenone I // mod. activity vs. 3 HTCL // * // *
1070 // N // carteriofenone J // mod. activity vs. 3 HTCL // * // *
1071 // N // carteriofenone K // mod. activity vs. 3 HTCL // * // *

674 Porifera *Hyattella* sp. // Lembeh Strait, Indonesia // Two new protein tyrosine phosphatase 1B inhibitors, hyattellactones A and B, from the Indonesian marine sponge *Hyattella* sp.
1072 // N // hyattellactone A // mod. inhibit. of PTP1B (diabetes type II target) // * // *
1073 // N // hyattellactone B // weak inhibit. of PTP1B (diabetes type II target) // * // *

675 Porifera *Clathria gombawuiensis* // Gageo-do, S. Korea // Additional sesterterpenes and a nortriterpene saponin from the sponge *Clathria gombawuiensis*
1074 // N // phorone B // mod. activity vs 2 HTCL, inactive vs 6 microbial strains // * // *
1075 // N // ansellone C // mod. activity vs 2 HTCL, inactive vs 6 microbial strains // * // *

676 Porifera *Haliclona* sp. // Gageo Is., S. Korea // A new sesterterpenoid showing anti-inflammatory effect from the marine sponge *Haliclona* species
1076 // N // * // weak inhibit. of NO production in LPS-stimulated RAW264.7 cells. // * // *



593 Porifera *Biemna ehrenbergi* // Jeddah, Saudi Arabia // Ehrenasterol and biemnic acid; new bioactive compounds from the Red Sea sponge *Biemna ehrenbergi*
1077 // N // ehrenasterol // mod. AB and cytotox. to 1 HTCL // * // *

677 Porifera *Monanchora* sp. // Ga-geo Is., S. Korea // Cytotoxic 5α,8α-epidioxy sterols from the marine sponge *Monanchora* sp.
1078 // N // 5α,8α-epidioxy-24-norcholesta-6,9(11),22-trien-3β-ol // weak activity vs 4 HTCL // * // *
1079 // N // 5α,8α-epidioxy-cholesta-6,9(11),24-trien-3β-ol // weak activity vs 4 HTCL // * // *
1080 // N // 5α,8α-epidioxy-cholesta-6,23-dien-3β,25-diol // weak activity vs 4 HTCL // * // *

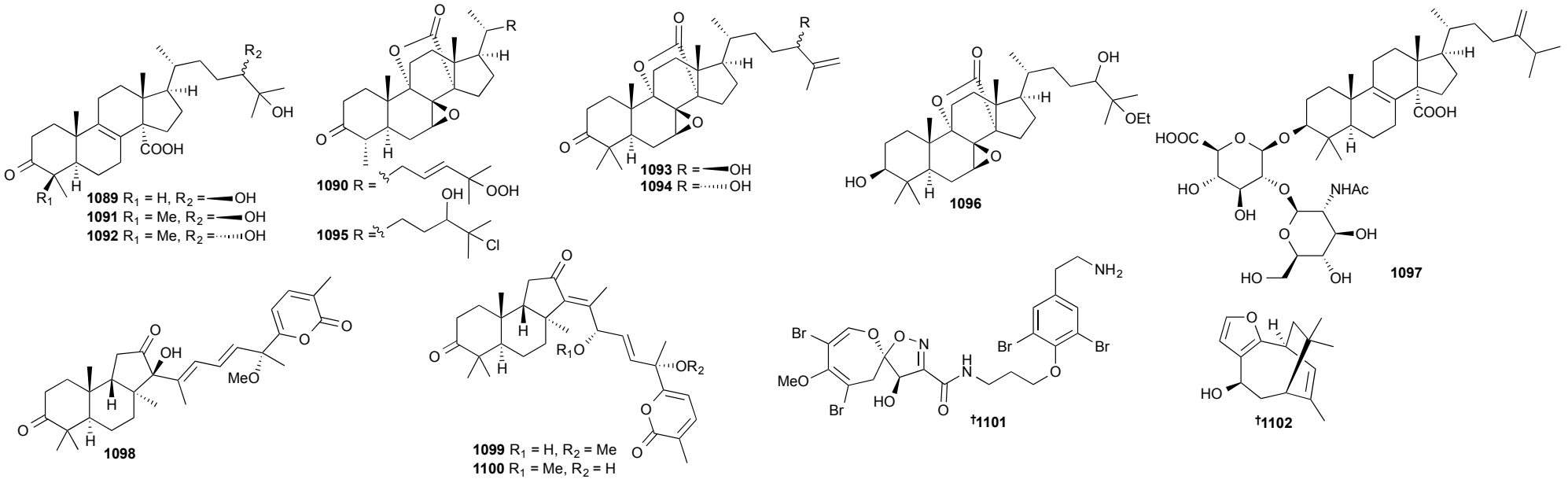
610 Porifera *Dragmacidon australe* // Round Reef, Whitsunday Is., Queensland // Dragmacidol A and dragmacidolide A from the Australian marine sponge *Dragmacidon australe*
1081 // N // dragmacidolide A // not tested // * // *

678 Porifera *Polymastia boletiformis* // Roskeeda Co., Galway, Ireland // Sulfated steroid–amino acid conjugates from the Irish marine sponge *Polymastia boletiformis*
1082 // N // * // mod. AF activity in disk diffusion assay // rare example of amino acid-sterol conjugate // *
1083 // N // * // mod. AF activity in disk diffusion assay // rare example of amino acid-sterol conjugate // *

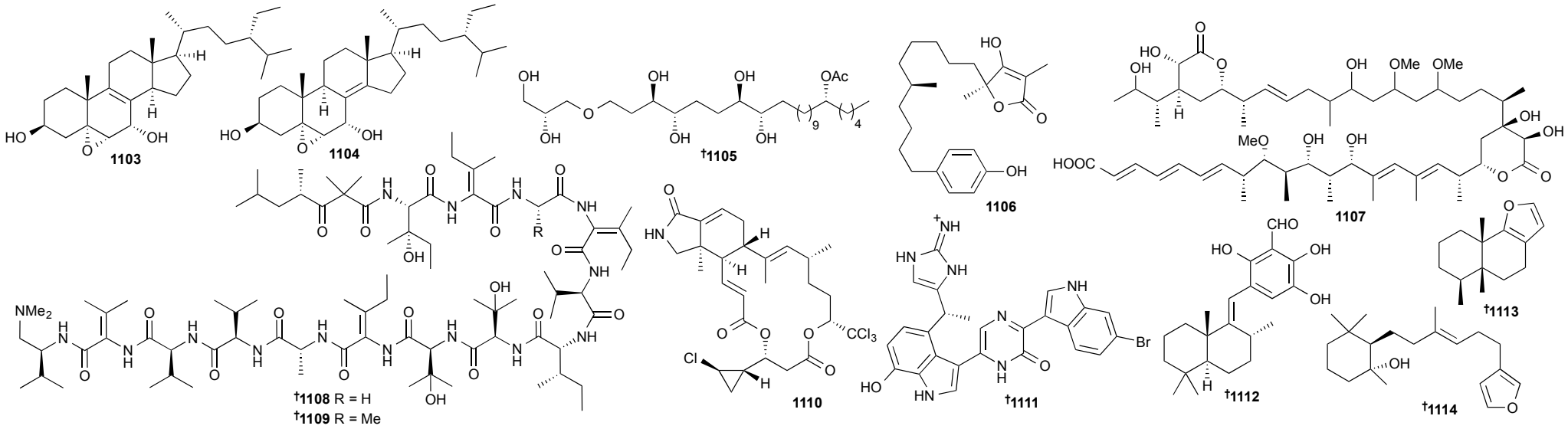
679 Porifera *Ircinia* sp. // Yeongdeok-gun, S. Korea // A new 9,11-secosterol with a 1,4-quinone from a Korean marine sponge *Ircinia* sp.
1084 // N // * // mod. to inactive vs 7 microbial strains // * // *

681 Porifera *Monanchora* sp. // Gageo Is., S. Korea // Monanchosterols A and B, bioactive bicyclo[4.3.1]steroids from a Korean sponge *Monanchora* sp.
1085 // N // monanchosterol A // toxic to RAW264.7 cells (IC_{50} 65 μM) // * // *
1086 // N // monanchosterol B // anti-inflammatory (inhibits LPS-induced IL-6 mRNA expression, IC_{50} 5.0 μM) // * // *
1087 // N // 24-methyl-5α-cholest-5,24(241)-diene-3β,16α-diol // anti-inflammatory (inhibits LPS-induced IL-6 mRNA expression, IC_{50} 5.2 μM) // * // *

675 Porifera *Clathria gombawuiensis* // Gageo-do, S. Korea // Additional sesterterpenes and a nortriterpene saponin from the sponge *Clathria gombawuiensis*
1088 // N // gombaside A // mod. activity vs 2 HTCL, inactive vs 6 microbial strains // * // *



682 Porifera *Penares* sp. // Vietnam, (dredged) South China Sea // Further study on *Penares* sp. from Vietnamese waters: minor lanostane and nor-lanostane triterpenes
1089 // N // 29-nor-24(*R*),25-dihydroxypenasterone // not tested // * // *
1090 // N // 29-nor-25-hydroperoxy-3-oxo-7β,8β-epoxy-5α-lanost-23(*E*)-en-30,9α-olide // not tested // * // *
1091 // N // 24(*R*),25-dihydroxypenasterone // not tested // * // *
1092 // N // 24(*S*),25-dihydroxypenasterone // not tested // * // *
1093 // N // 24(*R*)-hydroxy-3-oxo-7β,8β-epoxy-5α-lanost-25-en-30,9α-olide // not tested // * // *
1094 // N // 24(*S*)-hydroxy-3-oxo-7β,8β-epoxy-5α-lanost-25-en-30,9α-olide // not tested // * // *
1095 // N // 29-nor-24ξ-hydroxy-25-chloro-3-oxo-7β,8β-epoxy-5α-lanost- 30,9α-olide // not tested // likely artefact // *
1096 // N // 3β,24-dihydroxy-7β,8β-epoxy-5α-lanost-24-en-30,9α-olide // not tested // likely artefact // *
683 Porifera *Dictyonella marsilii* // Ciclon de Tierra, Ceuta, Spain // Eryloside W, a triterpenoid saponin from the sponge *Dictyonella marsilii*
1097 // N // eryloside W // not tested // * // *
602 Porifera *Stelletta tenuis* // Sanya, Hainan, China // Three new cytotoxic isomalabaricane triterpenes from the marine sponge *Stelletta tenuis*
1098 // N // stellettin N // weak activity vs 3 HTCL // name already used for a different compound // **s172**
1099 // N // stellettin O // weak activity vs 3 HTCL // * // *
1100 // N // stellettin P // weak activity vs 3 HTCL // * // *
686 Porifera *Aplysinella strongylata* // Bali, Indonesia // Absolute configuration and conformational study of psammaplysins A and B from the Balinese marine sponge *Aplysinella strongylata*
1101 // R // psammaplysin A // * // abs. config. estab. by comprehensive computational and experimental techniques. // **s173**
609 Porifera *Euryspongia* sp. // Iriomote Is., Japan // Abs. structures and bioactivities of euryspongins and eurydiene obtained from the sponge *Euryspongia* sp. collected at Iriomote Island
1102 // R // euryspongin A // inactive as PTP1B inhib. and vs 3 HTCL // abs. config. estab. from comparison of calcd. and expt. ECD // **s174**



688 Porifera *Neofibularia nolitangere* // * // Structure revision of two polyoxygenated sterols from the marine sponge *Neofibularia nolitangere*
1103 // R // (24*S*)-5α,6α-epoxy-24-ethylcholest-8-ene-3β,7α-diol // * // revised following comparison with sterols from Japanese edible mushrooms // **s175**
1104 // R // (24*S*)-5α,6α-epoxy-24-ethylcholest-8(14)ene-3β,7α-diol // * // revised following comparison with sterols from Japanese edible mushrooms // **s175**

716 Porifera *Mycale acerata* // * // Total synthesis and structural revision of mycalol, an anticancer natural product from the marine source
1105 // R // mycalol // * // revision based on synthesis // **s176**

727 Porifera *Plakortis angulospiculatus* // * // Synthesis and structural reassignment of plakinidone
1106 // R // plakinidone // * // revision based on synth.; estab. rel. config. perlactone is from oxidation of sensitive tetronic acid moiety. // **s177**

729 Porifera *Hemimycale* sp. // * // Synthetic studies toward the C32–C46 segment of hemicalide. Assignment of the relative configuration of the C36–C42 subunit
1107 // R // hemicalide // * // rel. config of C-36 to C-42 section estab. by synthesis. // **s178**

748 Porifera *Ceratopsion* sp. // * // Elucidation and total synthesis of the correct structures of tridecapeptides yaku'amides A and B. Synthesis-driven stereochemical reassignment of four amino acid residues
1108 // R // yaku'amide A // * // revision based on synthesis and confirmed by reisolation of natural material // **s179**
1109 // R // yaku'amide B // * // revision based on synthesis // **s179**

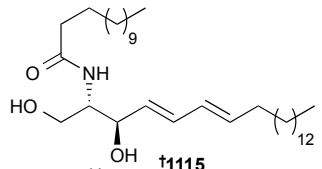
754 Porifera *Phorbas* sp. // * // Total synthesis and structural revision of (+)-muironolide A
1110 // R // (+)-muironolide A // * // structure revised and abs. config. established by synthesis // **s180**

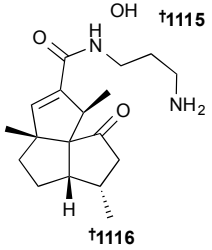
760 Porifera *Dragmacidon* sp, *Spongosorites* sp. // * // Asymmetric total synthesis of (+)-dragmacidin D reveals unexpected stereocomplexity
1111 // R // (+)-dragmacidin D // * // abs. config. estab. by synthesis // **s181**

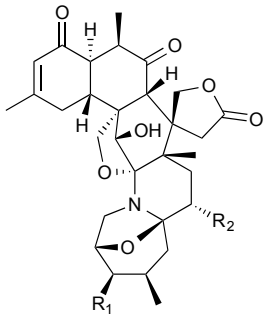
784 Porifera *Siphonodictyon coralliphagum*, *Aka coralliphaga* // * // Total synthesis and structure revision of (−)-siphonodictyal B and its biomimetic conversion into (+)-liphagal
1112 // R // (–)-siphonodictyal B // * // revision based on synthesis. also converted into liphagal in biomimetic conversion. // **s182**

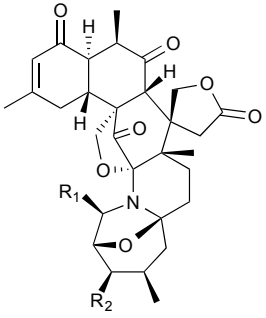
787 Porifera *Cacospongia mycofijiensis*, *Fascaplysinopsis cavernosa* // * // Total synthesis of aignopsanes: (+)-aignopsanoic acid A, (−)-methyl aignopsanoate A, and (−)-isoaignopsanoic A
1113 // R // (+)-microcionin-1 // * // abs. config. estab. by synthesis // **s183**

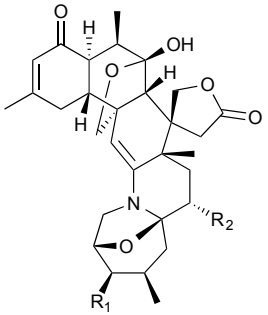
796 Porifera *Dysidea amblia*, *Oceanapia bartschi* // * // First enantioselective synthesis of marine diterpene ambliol-A
1114 // R // ambliol A // * // abs. config. estab. by synthesis // **s184**

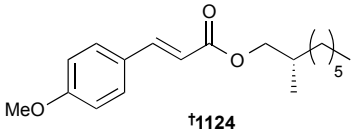


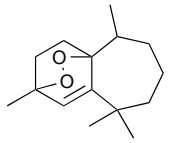


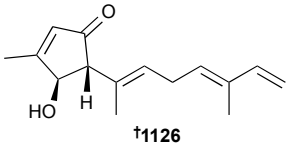


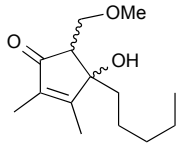


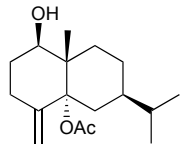


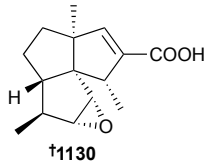












805 Cnidaria *Sarcophyton auritum* // Red Sea // Mechanism of action of antiepileptic ceramide from Red Sea soft coral *Sarcophyton auritum*
1115 // N // * // antiepileptic // abs. config.. config. by Moshers // *

806 Cnidaria *Paraplexaura* sp. // Naozhou Is., Zhanjiang, China // N-(3-aminopropyl)subergorgamide, a new alkaloid from the gorgonian *Paraplexaura* sp.
1116 // N // N-(3-aminopropyl)-subergorgamide // not tested // abs. config. by comparison with related MNPs // *

807 Cnidaria *Zoanthus kuroshio* // Kaohsiung City, Taiwan // New alkaloids from Formosan zoanthid *Zoanthus kuroshio*
1117 // N // kuroshine C // inactive in number of assays // * // *
1118 // N // kuroshine D // not tested // * // *
1119 // N // kuroshine E // weak cytotox. (B16) // * // *
1120 // N // kuroshine F // inactive in number of assays // * // *
1121 // N // kuroshine G // not tested // * // *
1122 // N // 3β-hydroxyzoanthenamide // inactive in number of assays // * // *
1123 // N // 7α-hydroxyzoanthenamide // inactive in number of assays // * // *

808 Cnidaria *Sarcophyton ehrenbergi* // Gulf of Mannar, India // Isolation, structural assignment and synthesis of (*S,E*)-2-methyloctyl 3-(4-methoxyphenyl) propenoate from the marine soft coral S*arcophyton ehrenbergi*
1124 // N // (*S,E*)-2-methyloctyl 3-(4-methoxyphenyl) propenoate // weakly cytotox. (3 HTCL) // abs. config. by stereoselective synthesis. // *

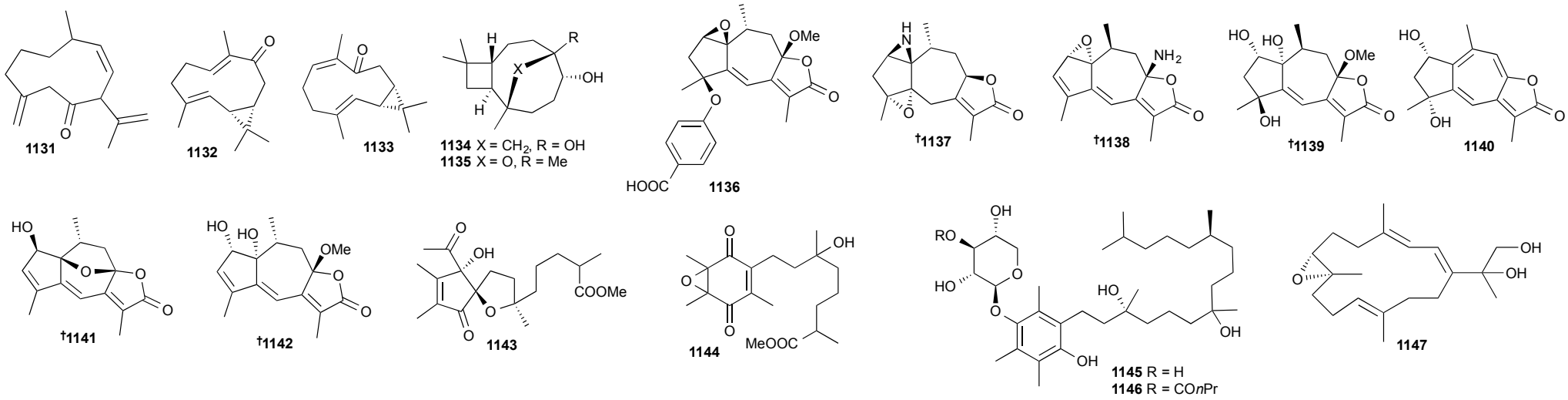
809 Cnidaria *Litophyton arboreum* // Jeddah, Saudi Arabia // Two new terpenoidal derivatives: a himachalene-type sesquiterpene and 13,14-secosteroid from the *Litophyton arboreum*
1125 // N // 3α,6α-epidioxyhimachal-1-ene // unspecified cytotox. // * // *

810 Cnidaria *Sinularia sandensis* // Siaoliouciou Is., Taiwan // Sandensone A, a novel sesquiterpenoid from the Formosan soft coral *Sinularia sandensis*
1126 // N // sandensone A // modest cytotox. (2 HTCL) // abs. config. by Moshers // *

811 Cnidaria *Sinularia acuta* // Weizhou Is., Guangxi Province, China // Cyclopentenone derivatives and polyhydroxylated steroids from the soft coral *Sinularia acuta*
1127 // N // (+)-sinularone J // not tested // isolated as racemic MNP // *
1128 // N // (–)-sinularone J // not tested // isolated as racemic MNP // *

812 Cnidaria *Sinularia gaweli* // Sansiantai, Taitung county, Taiwan // Terpenoids from the octocoral *Sinularia gaweli*
1129 // N // 5α-acetoxy-4(14)-eudesmene-1β-ol // mild anti-inflammatory // * // *

813 Cnidaria *Subergorgia suberosa* // Hainan Is., China // Subergane-type sesquiterpenes from gorgonian coral *Subergorgia suberosa* with antibacterial activities
1130 // N // epoxysubergorgic acid // inactive AB // abs. config. by ECD and chemical transformations. // *



814 Cnidaria *Sarcophyton glaucum* // Jeddah, Saudi Arabia // New cytotoxic isoprenoid derivatives from the Red Sea soft coral *Sarcophyton glaucum*
1131 // N // 6-oxogermacra-4(15),8,11-triene // mild cytotox. to HTCL // * // *

815 Cnidaria *Capnella* sp. // Mantanani Is., Sabah, Malaysia // Capgermacrenes A and B, bioactive secondary metabolites from a Bornean soft coral, *Capnella sp.*
1132 // N // capgermacrene A // inhibits iNOS expression // * // *
1133 // N // capgermacrene B // inactive // * // *

816 Cnidaria *Rumphella antipathes* // S. Taiwan // Natural caryophyllane sesquiterpenoids from *Rumphella antipathies*
1134 // M // (8*R*,9*R*)-isocaryolane-8,9-diol // weak inhib. elastase release // known synthetic // **s185**
1135 // M // 4β,8β-epoxycaryophyllan-5-ol // weak enhancement superoxide production // known synthetic // **s186**

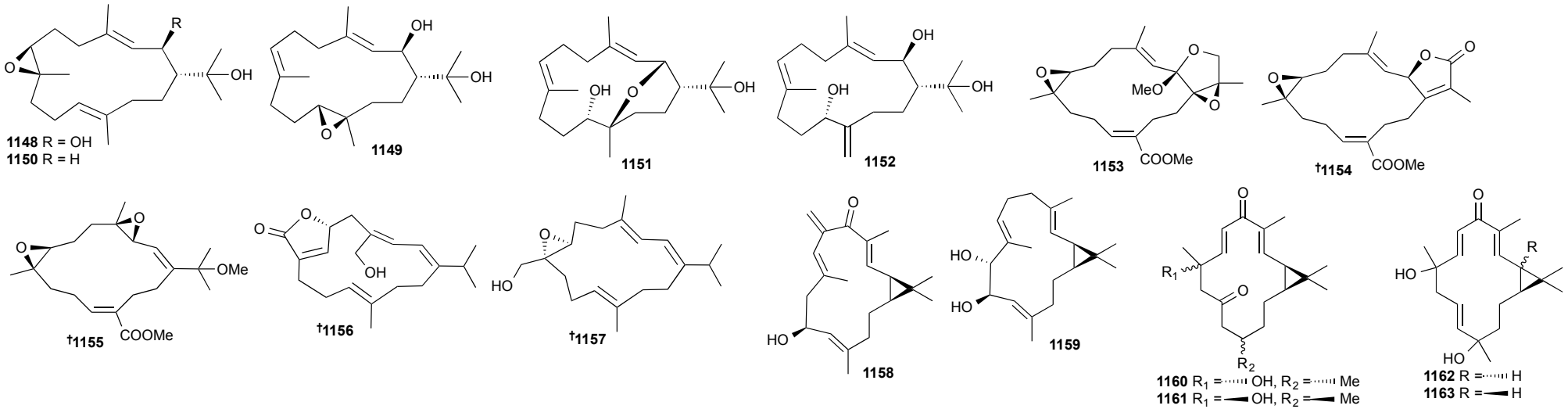
817 Cnidaria *Menella kanisa* // S. China Sea // Menverins H–L, new highly oxygenated guaiane lactones from the gorgonian coral *Menella kanisa*
1136 // N // menverin H // not tested // // *
1137 // N // menverin I // not tested // abs. config. by CD and NOESY. // *
1138 // N // menverin J // not tested // abs. config. by CD and NOESY. // *
1139 // N // menverin K // not tested // abs. config. by CD and NOESY. // *
1140 // N // menverin L // not tested // * // *

818 Cnidaria *Menella woodin* // Vietnam // Structures and absolute stereochemistry of guaiane sesquiterpenoids from the gorgonian *Menella woodin*
1141 // N // (1*S*,2*R*,8*S*,10*R*)-1,8-epoxy-2-hydroxy-guaian-3,5,7-trien-12,8-olide // not tested // abs. config. by calc optical rotation. // *
1142 // N // (1*R*,2*S*,8*S*,10*R*)-1,2-dihydroxy-8-methoxy-guaian-3,5,7-trien-12,8-olide. // not tested // abs. config. by calc optical rotation. // *

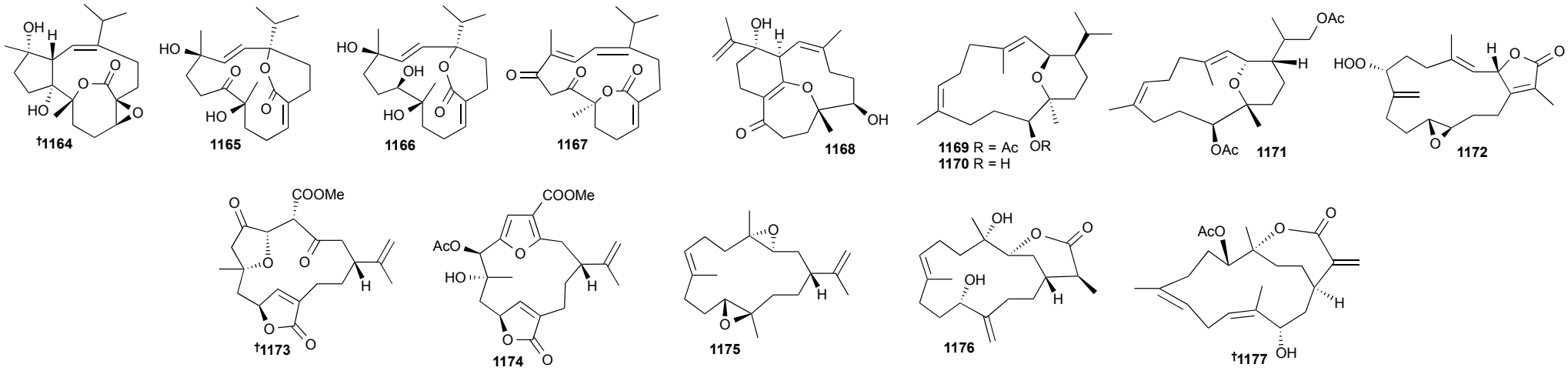
819 Cnidaria *Cladiella hirsuta* // Sianglu Islet, Penghu Is., Taiwan // New anti-inflammatory tocopherol-derived metabolites from the Taiwanese soft coral *Cladiella hirsuta*
1143 // N // hirsutocospiro A // inhib. superoxide prod and elastase release // * // *
1144 // N // hirsutocoquinone // inactive // * // *

820 Cnidaria *Cladiella hirsuta*, *Sinularia nanolobata* // Sianglu Islet, Taiwan // Steroidal and α-tocopherylhydroquinone glycosides from *Cladiella hirsuta* and *Sinularia nanolobata*
1145 // N // cladophenol glycoside A // not tested // * // *
1146 // N // cladophenol glycoside B // not tested // * // *

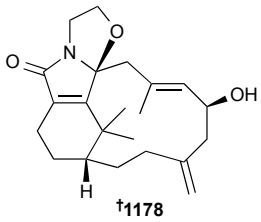
814 Cnidaria *Sarcophyton glaucum* // Jeddah, Saudi Arabia // New cytotoxic isoprenoid derivatives from the Red Sea soft coral *Sarcophyton glaucum*
1147 // M // sarcophinediol // mild cytotox. to HTCL // mixture of epimers, previously semi-synthetic. // **s187**



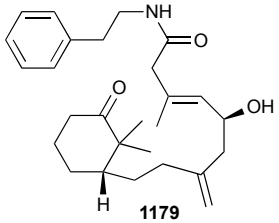
821 Cnidaria *Nephthea columnaris* // S. Taiwan // New cembranoid diterpenes from the cultured octocoral *Nephthea columnaris*
1148 // N // 2β-hydroxy-7β,8α-epoxynephthenol // not cytotox. to TCL // * // *
1149 // N // 2β-hydroxy-11α,12β-epoxynephthenol // not cytotox. to TCL // * // *
1150 // N // epoxynephthenol // not cytotox. to TCL // duplicate name // **s188**
822 Cnidaria *Nephthea columnaris* // South Taiwan // New anti-inflammatory cembranes from the cultured soft coral *Nephthea columnaris*
1151 // N // columnariol A // weak inhib. iNOS and COX-2 expression // * // *
1152 // N // columnariol B // * // * // *
823 Cnidaria *Sarcophyton ehrenbergi* // San-Hsian-Tai, Taitong County, Taiwan // Polyoxygenated cembrane diterpenoids from the soft coral *Sarcophyton ehrenbergi*
1153 // N // (+)-1,15-epoxy-2-methoxy-12-methoxycarbonyl-(11*E*)-sarcophytoxide // not cytotox. to TCL // * // *
1154 // N // (+)-2-*epi*-12-methoxycarbonyl-(11*E*)-sarcophine // not cytotox. to TCL // abs. config. by CD. // *
1155 // N // 3,4-epoxyehrenberoxide A // not cytotox. to TCL // abs. config. by CD. // *
1156 // N // ehrenbergol D // mildly cytotox. P388 // abs. config. by CD. // *
1157 // N // ehrenbergol E // mildly cytotox. P389 // abs. config. by CD. // *
824 Cnidaria *Sinularia* sp. // Dongluo Is., Hainan Province, China // New casbane diterpenoids from the Hainan soft coral *Sinularia* species
1158 // N // sinularcasbane G // not cytotox. to HTCL // * // *
1159 // N // sinularcasbane H // not cytotox. to HTCL // * // *
1160 // N // sinularcasbane I // not cytotox. to HTCL // * // *
1161 // N // sinularcasbane J // not cytotox. to HTCL // * // *
1162 // N // sinularcasbane K // not cytotox. to HTCL // * // *
1163 // N // sinularcasbane L // not cytotox. to HTCL // * // *



825 Cnidaria *Sarcophyton elegans* // Xisha Is., China // Bioactive cembranoids from the South China Sea soft coral *Sarcophyton elegans*
1164 // N // sarcophelegan A // inactive // abs. config. by X-ray // *
1165 // N // sarcophelegan B // inhib. MDA-MB-231 cell migration // * // *
1166 // N // sarcophelegan C // inactive // * // *
1167 // N // sarcophelegan D // inactive // * // *
826 Cnidaria *Sarcophyton solidum* // Dongshan Isl., Guangdong Province, China // Diterpenoids from the South China Sea soft coral *Sarcophyton solidum*
1168 // N // 7-deacetyl-sarsolenone // not tested // * // *
827 Cnidaria *Sarcophyton trocheliophorum* // Jeddah, Saudi Arabia // Rare pyrane-based cembranoids from Red Sea *Sarcophyton trocheliophorum* as potential antimicrobial–antitumor agents
1169 // N // sarcotrocheliol acetate // inactive AB // * // *
1170 // N // sarcotrocheliol // inactive AB // * // *
809 Cnidaria *Litophyton arboreum* // Jeddah, Saudi Arabia // Two new terpenoidal derivatives: a himachalene-type sesquiterpene and 13,14-secosteroid from *Litophyton arboreum*
1171 // M // 11,16-diacetoxy-2,12-epoxy-(3*E*,7*E*)-1-cembra-3,7-diene // modest cytotox. (3 HTCL) // * // **s189**
828 Cnidaria *Sarcophyton trocheliophorum* // Lanyu Is., Taiwan // Trocheliolide A, a hydroperoxycembranoidal diterpene from the octocoral *Sarcophyton trocheliophorum*
1172 // N // trocheliolide A // not cytotox. (4 HTCL) // * // *
829 Cnidaria *Sinularia sandensis*, *S. flexibilis* // * // Structural elucidation and structure–anti-inflammatory activity relationships of cembranoids from cultured soft corals *Sinularia sandensis* and *Sinularia flexibilis*
1173 // N // 4-carbomethoxyl-10-epigyrosanolide E // weak inhib. iNOS expression // abs. config. by X-ray. // *
1174 // N // 7-acetylsinumaximol B // weak inhib. iNOS expression // * // *
1175 // N // diepoxycembrene B // weak inhib. iNOS and COX-2 expression // * // *
1176 // N // dihydromanaarenolide I // weak inhib. iNOS and COX-2 expression // * // *
1177 // N // isosinulaflexiolide K // weak inhib. iNOS and COX-2 expression // abs. config. by X-ray. // *



†1178



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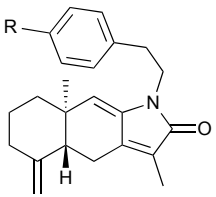
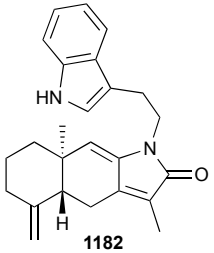


1180 R = H
1181 R = OH



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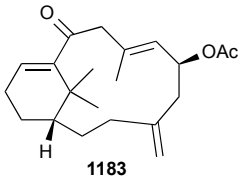

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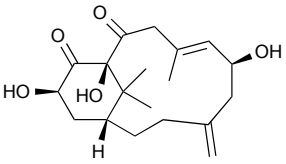

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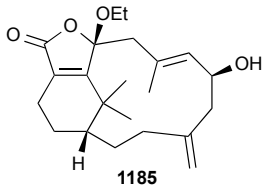

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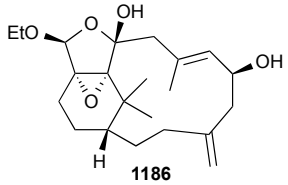

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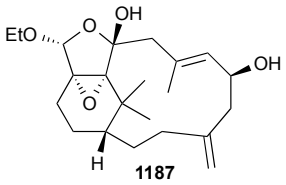

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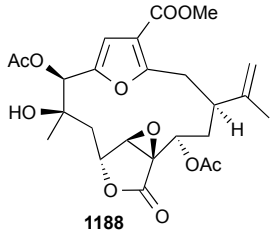

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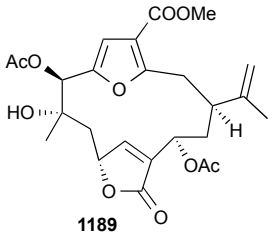
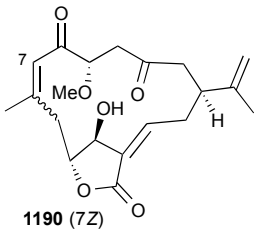
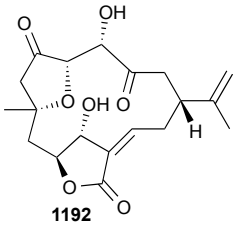


1189

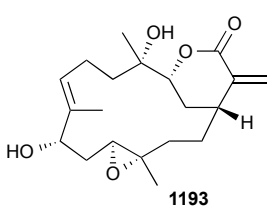


1190 (7*Z*)
1191 (7*E*)



1192

834 Cnidaria *Cespitularia taeniata* // Green Is., Taiwan // Nitrogen-containing diterpenoids, sesquiterpenoids, and nor-diterpenoids from *Cespitularia taeniata*
1178 // N // cespilamide A // not cytotox. // abs. config. by Moshers and MM2 modeling. // *
1179 // N // cespilamide B // not cytotox. // * // *
1180 // N // cespilamide C // weak cytotox. (4 HTCL) // * // *
1181 // N // cespilamide D // not cytotox. // * // *
1182 // N // cespilamide E // weak cytotox. (4 HTCL) // * // *
1183 // N // cespitaenin A // weak cytotox. (4 HTCL) // * // *
1184 // N // cespitaenin B // not cytotox. // * // *
1185 // N // cespitaenin C // not cytotox. // * // *
1186 // N // cespitaenin D // not cytotox. // * // *
1187 // N // cespitaenin E // not cytotox. // * // *
812 Cnidaria *Sinularia gaweli* // Sansiantai, Taitung county, Taiwan // Terpenoids from the octocoral *Sinularia gaweli*
1188 // N // (–)-leptodiol acetate // weakly anti-inflammatory // enantiomer of known MNP // **s190**
1189 // N // sinulacembranolide A // strong inhib. of iNOS expression // * // *
836 Cnidaria *Sinularia numerosa* // * // New anti-inflammatory norcembranoids from the soft coral *Sinularia numerosa*
1190 // N // sinumerolide A // inhib. iNOS expression // duplicate name // **s191**
1191 // N // (7*E*)-sinumerolide A // inhib iNOS expression // duplicate name // **s191**
839 Cnidaria *Sinularia numerosa* // * // Norcembranoidal diterpenes from the cultured-type octocoral *Sinularia numerosa*
1192 // N // 4α-hydroxy-5-episinuleptolide // mild cytotox. (5 HTCL) // * // *



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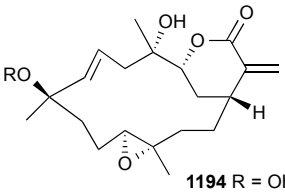
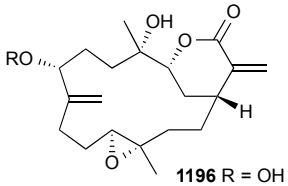
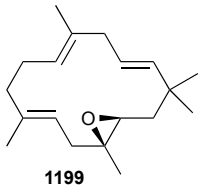


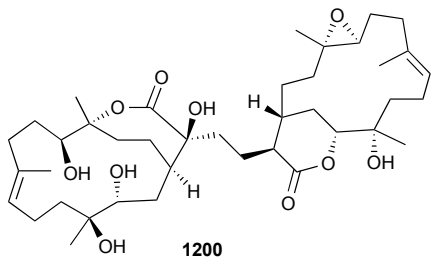
1194 R = OH
1195 R = H



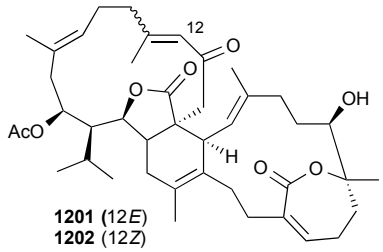
1196 R = OH
1197 R = H
1198 R = Ac



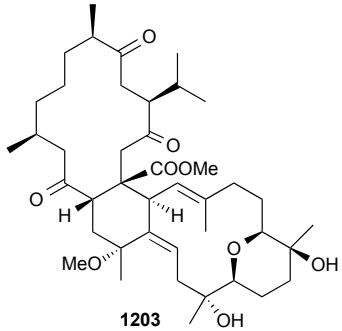
1199



1200



1201 (12*E*)
1202 (12*Z*)



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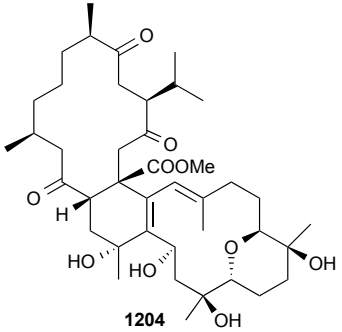

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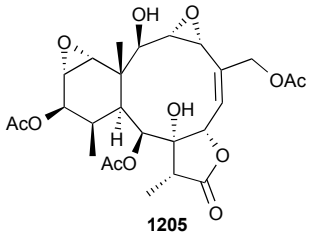

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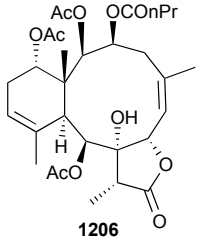
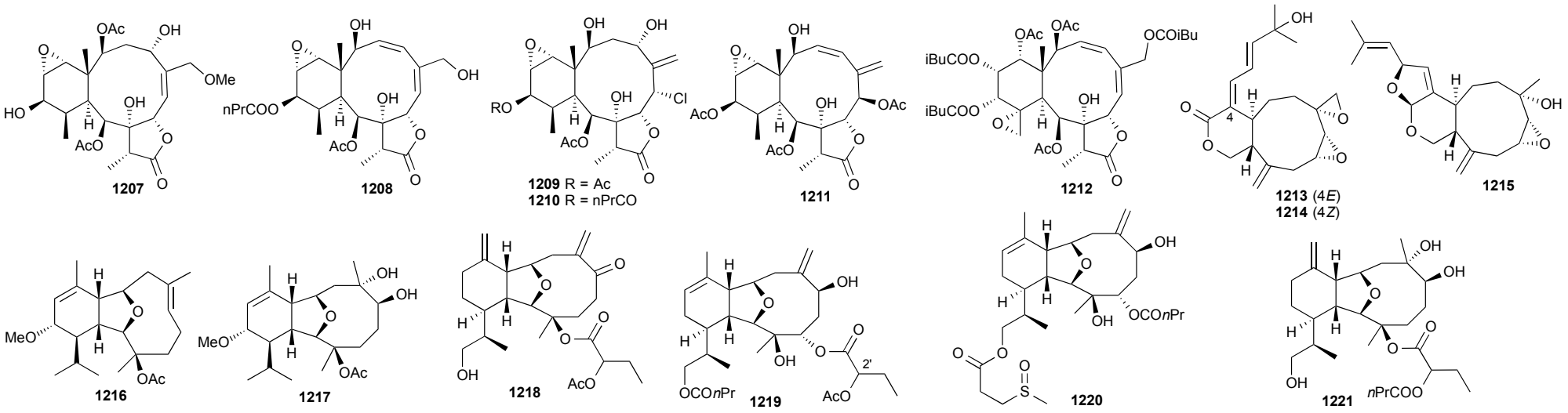
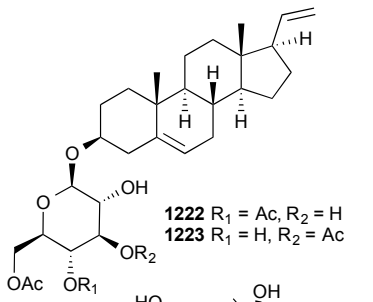


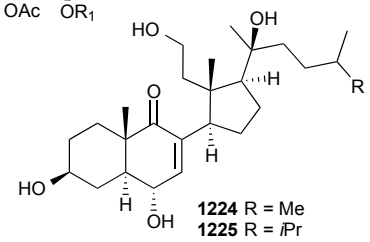
1206

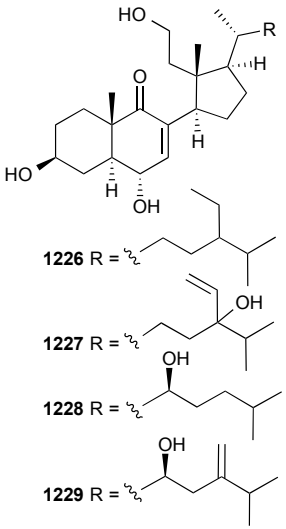
840 Cnidaria *Sinularia flexibilis* // Yalong Bay, China // Structural diversity of terpenoids in the soft coral *Sinularia flexibilis*, evidenced by a collection from the South China Sea
1193 // N // 9α-hydroxy-flexibilide // not cytotox. // * // *
1194 // N // 15,17-dedihydromanaarenolide E // not cytotox. // * // *
1195 // N // 8-dehydroxy-15,17-dedihydromanaarenolide E // not cytotox. // * // *
1196 // N // 15,17-dedihydromanaarenolide A // not cytotox. // * // *
1197 // N // 15,17-dedihydromanaarenolide C // not cytotox. // * // *
1198 // N // *epi*-flexilarin A // not cytotox. // * // *
1199 // N // epoxyflexibilene // not cytotox. // * // *
1200 // N // sinulaflexiolide L // not cytotox. // X-ray structure // *
842 Cnidaria *Sarcophyton glaucum* // * // Glaucumolides A and B, biscembranoids with new structural type from a cultured soft coral *Sarcophyton glaucum*
1201 // N // glaucumolide A // mild cytoxicity and inhib superoxide formation and elastase release // * // *
1202 // N // glaucumolide B // mild cytoxicity and inhib superoxide formation and elastase release // * // *
843 Cnidaria *Sarcophyton pauciplicatum* // Hai Phong, Vietnam // Cytotoxic biscembranoids from the soft coral *Sarcophyton pauciplicatum*
1203 // N // sarcophytolide M // mild cytotox. (8 TCL) // * // *
1204 // N // sarcophytolide N // not cytotox. // * // *
844 Cnidaria *Briareum* sp. // S. Taiwan // Briarenolides K and L, new anti-inflammatory briarane diterpenoids from an octocoral *Briareum* sp. (Briareidae)
1205 // N // briarenolide K // inhib iNOS expression // * // *
1206 // N // briarenolide L // inhib iNOS expression // * // *

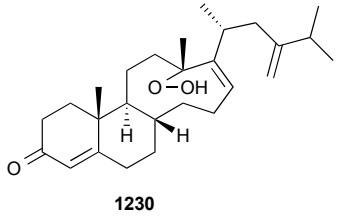


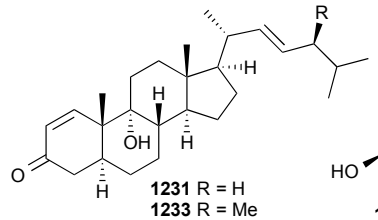
845 Cnidaria *Briareum* sp. // S. Taiwan // Briarenolides U–Y, new anti-inflammatory briarane diterpenoids from an octocoral *Briareum* sp. (Briareidae)
1207 // N // briarenolide U // inhib iNOS and COX-2 expression // * // *
1208 // N // briarenolide V // inhib iNOS and COX-2 expression // * // *
1209 // N // briarenolide W // inhib iNOS and COX-2 expression // * // *
1210 // N // briarenolide X // inhib iNOS and COX-2 expression // * // *
1211 // N // briarenolide Y // inhib iNOS and COX-2 expression // * // *
846 Cnidaria *Dichotella gemmacea* // Meishan Is., Hainan province, China // A new briarane-type diterpenoid from the South China Sea Gorgonian *Dichotella gemmacea*
1212 // N // dichotellide V // not cytotox. // * // *
847 Cnidaria *Xenia* sp. // Miyako Is., Okinawa, Japan // Structures and bioactivities of xenicanes from an Okinawan soft coral *Xenia* sp.
1213 // N // * // non-cytotox. weakly anti-inflammatory // X-ray // *
1214 // N // * // non-cytotox. weakly anti- inflammatory // * // *
1215 // N // * // non-cytotox. weakly anti- inflammatory // * // *
848 Cnidaria *Muricella sibogae* // Weizhou Is., Guangxi Province, China // Two new eunicellin diterpenoids from the South China Sea gorgonian *Muricella sibogae* and their bioactivities
1216 // N // sibogin C // not cytotox. (4 HTCL) // * // *
1217 // N // sibogin D // not cytotox. (4 HTCL) // * // *
849 Cnidaria *Cladiella hirsuta* // Sianglu Islet, Penghu Is. // Eunicellin-based diterpenoids, hirsutalins S–V, from the Formosan soft coral *Cladiella hirsuta*
1218 // N // hirsutalin S // non cytotox. and weak superoxide production and elastase releaase // * // *
1219 // N // hirsutalin T // non cytotox. and weak superoxide production and elastase releaase // mixture of 2' epimers. // *
1220 // N // hirsutalin U // non cytotox. and weak superoxide production and elastase releaase // mixture of sulfoxide epimers. // *
1221 // N // hirsutalin V // non cytotox. and weak superoxide production and elastase releaase // * // *

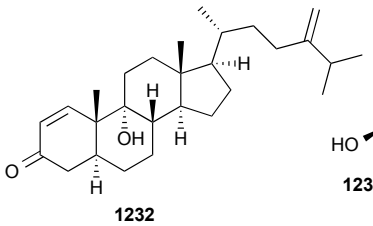


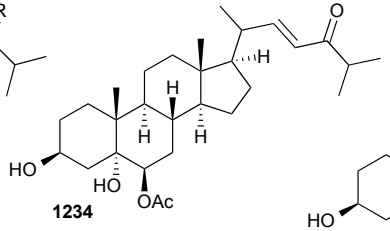


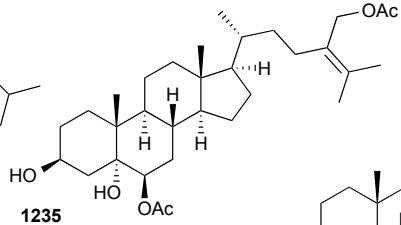


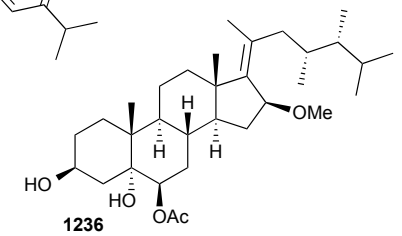


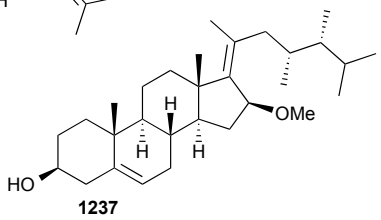












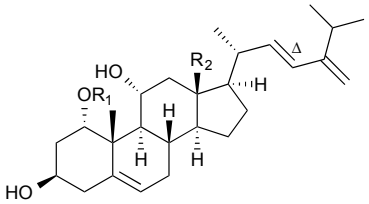
820 Cnidaria *Cladiella hirsuta*, *Sinularia nanolobata* // Sianglu Islet, Taiwan // Steroidal and α-tocopherylhydroquinone glycosides from *Cladiella hirsuta* and *Sinularia nanolobata*
1222 // N // hirsutosteroside A // inhib. elastase release // * // *
1223 // N // hirsutosteroside B // not tested // * // *

850 Cnidaria *Subergorgia suberosa* // Naozhou Is., Zhanjiang, China // 9,11-Secosteroids with cytotoxic activity from the South China Sea gorgonian coral *Subergorgia suberosa*
1224 // N // subergorgol K // not cytotox. to HeLa // * // *
1225 // N // subergorgol L/M // not cytotox. to HeLa // mixture of C-24 epimers // *
1226 // N // subergorgols N/O // mildly cytotox. to HeLa // mixture of C-24 epimers // *
1227 // N // subergorgol P/Q // not cytotox. to HeLa // mixture of C-24 epimers // *
1228 // N // subergorgol R // not cytotox. to HeLa // * // *
1229 // N // subergorgol S // not cytotox. to HeLa // * // *

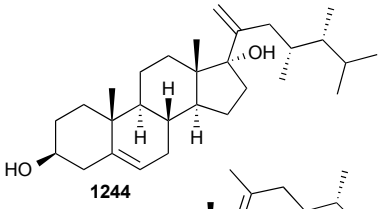
809 Cnidaria *Litophyton arboreum* // Jeddah, Saudi Arabia // Two new terpenoidal derivatives: a himachalene-type sesquiterpene and 13,14-secosteroid from *Litophyton arboreum*
1230 // N // 13,14-seco-22-norergosta-4,24(28)-dien-19-hydroperoxide-3-one // unspecified cytotox. // * // *

851 Cnidaria *Subergorgia rubra* // Xisha Is., China // Antibacterial Δ1-3-ketosteroids from the South China Sea gorgonian coral *Subergorgia rubra*
1231 // N // subergosterone A // mild to mod. AB // * // *
1232 // N // subergosterone B // mild to mod. AB // * // *
1233 // N // subergosterone C // mild to mod. AB // * // *

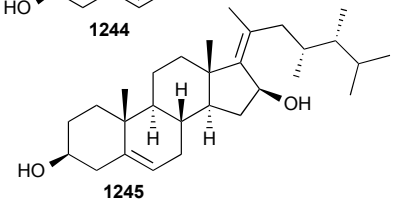
811 Cnidaria *Sinularia acuta* // Weizhou Is., Guangxi Province, China // Cyclopentenone derivatives and polyhydroxylated steroids from the soft coral *Sinularia acuta*
1234 // N // (3β,5α,6β,22*E*)-3,5-dihydroxy-24-oxocholest-22-en-6-yl acetate // weakly cytotox. // * // *
1235 // N // (3β,5α,6β)-3,5-dihydroxyergost-24-ene-6,28-diyl diacetate // weakly cytotox. // * // *
1236 // N // (3β,5α,6β,16β,17*Z*,23*R*)-3,5-dihydroxy-16-methoxy-23-methylergost-17-en-6-yl acetate // weakly cytotox. // * // *
1237 // N // (3β,16β,17*Z*,23*R*)-16-methoxy-23-methylergosta-5,17-dien-3-ol // not tested // * // *



1238 R_1 = Ac, R_2 = CH_2OH, Δ saturated
1239 R_1 = Ac, R_2 = CHO, Δ saturated
1240 R_1 = H, R_2 = Me
1241 R_1 = Ac, R_2 = Me
1242 R_1 = Ac, R_2 = CH_2OAc
1243 R_1 = Ac, R_2 = CHO



1244



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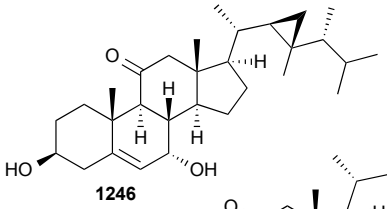

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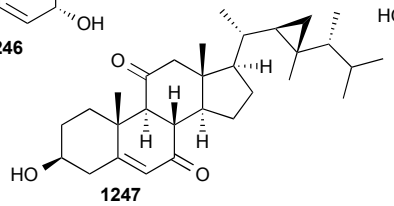

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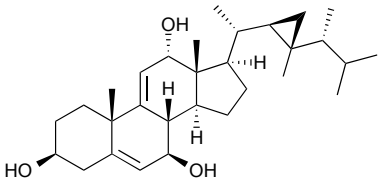

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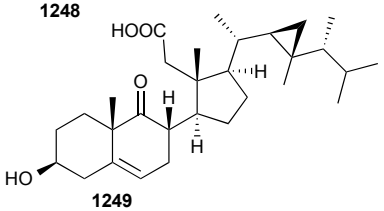

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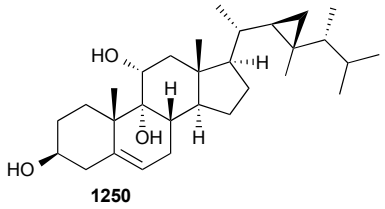
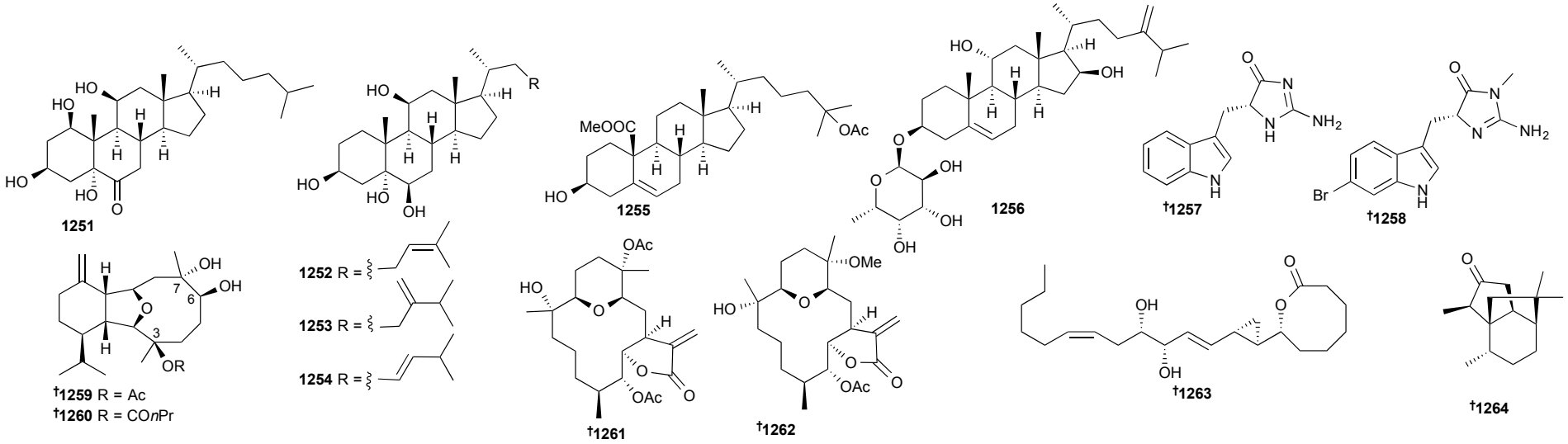


1250

852 Cnidaria *Palythoa tuberculosa* // Hurghada, Egypt // New polyhydroxylated sterols from *Palythoa tuberculosa* and their apoptotic activity in cancer cells
1238 // N // palysterol A // weakly cytotox. // * // *
1239 // N // palysterol B // not cytotox. // * // *
1240 // N // palysterol C // not cytotox. // * // *
1241 // N // palysterol D // not cytotox. // * // *
1242 // N // palysterol E // not cytotox. // * // *
1243 // N // palysterol F // weakly cytotox. // * // *
853 Cnidaria *Klyxum flaccidum* // Hsiao Liuchiu Is., Taiwan // New bioactive steroids from the soft coral *Klyxum flaccidum*
1244 // N // klyflaccisteroid A // mildly cytotox. to HTCL // * // *
1245 // N // klyflaccisteroid B // not cytotox. // * // *
1246 // N // klyflaccisteroid C // mildly cytotox. to HTCL // * // *
1247 // N // klyflaccisteroid D // mildly cytotox. to HTCL // * // *
1248 // N // klyflaccisteroid E // mildly cytotox. to HTCL // * // *
1249 // N // klyflaccisteroid F // mildly cytotox. to HTCL // * // *
1250 // R // gorgost-5-ene-3β,9α,11α-triol // mildly cytotox. to HTCL // corrected to 24*R* configuration. // **s192**



854 Cnidaria *Menella woodin* // Coto Is., Quang Ninh province, Vietnam // Polyoxygenated steroids from the gorgonian *Menella woodin* with capabilities to modulate ROS levels in macrophages at response to LPS
1251 // N // menellsteroid E // inhib. production of superoxide by stimulated macrophages // * // *
1252 // N // menellsteroid F // increased production of superoxide by stimulated macrophages // * // *
1253 // N // menellsteroid G // increased production of superoxide by stimulated macrophages // * // *
1254 // N // menellsteroid H // inhib. production of superoxide by stimulated macrophages // * // *

855 Cnidaria *Dichotella gemmacea* // Sanya, Hainan Province, China // New 19-oxygenated steroid from the South China Sea gorgonian *Dichotella gemmacea*
1255 // N // 25-acetate-nebrosteroid K // toxic to brine shrimp // * // *

820 Cnidaria *Cladiella hirsuta*, *Sinularia nanolobata* // Sianglu Islet, Taiwan // Steroidal and α-tocopherylhydroquinone glycosides from *Cladiella hirsuta* and *Sinularia nanolobata*
1256 // N // lobatasteroside A // inactive // * // *

856 Cnidaria *Heteractis aurora* // Bali, Indonesia // Indole alkaloids from the sea anemone Heteractis aurora and homarine from *Octopus cyanea*
1257 // M // * // not tested // abs. config. by synthesis // *
1258 // N // * // not tested // abs. config. by synthesis // *

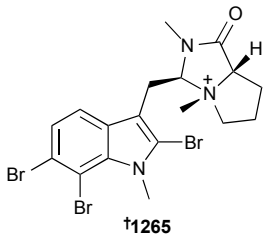
864 Cnidaria *Sclerophytum capitalis*, *Sinularia capitalis* // * // Synthesis of four diastereomers of sclerophytin F and structural reassignment of several sclerophytin natural products
1259 // R // sclerophytin E/F // * // corrected by synthesis // **s193**
1260 // R // litophynin E // * // corrected by synthesis // **s194**

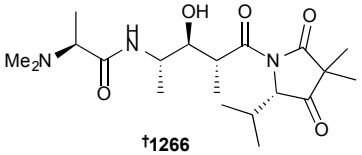
868 Cnidaria *Eunicea mammosa* // * // Structural revision of (+)-uprolide F diacetate confirmed by asymmetric total synthesis
1261 // R // (+)-uprolide F diacetate // * // corrected by synthesis // **s195**

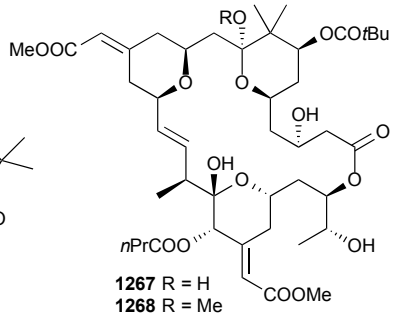
869 Cnidaria *Eunicea mammosa* // * // Total synthesis and structural revision of (+)-uprolide G acetate
1262 // R // uprolide G acetate // * // corrected by synthesis // **s196**

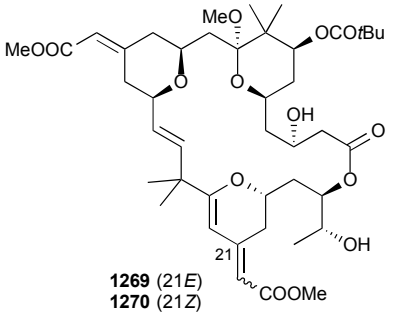
871 Cnidaria *Solanderia secunda* // * // Total synthesis of solandelactone I
1263 // R // solandelactone I // * // corrected by synthesis // **s197**

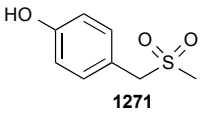
873 Cnidaria *Subergorgia suberosa*, *Isis hippuris* // * // First enantioselective total synthesis and configurational assignments of suberosenone and suberosanone as potential antitumor agents
1264 // R // (–)-suberosanone // * // corrected by synthesis // **s198**

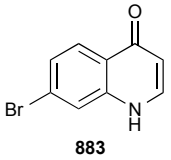


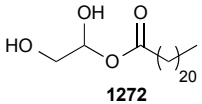


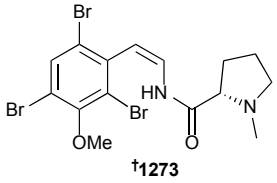












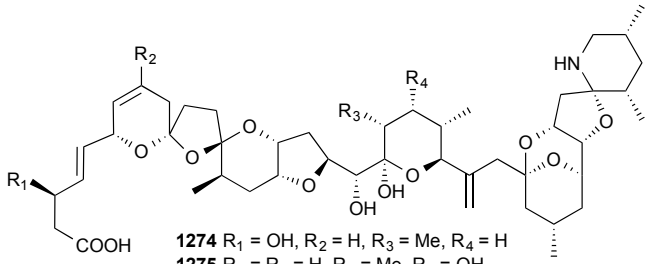
895 Bryozoa *Amathia tortuosa* // * // Kororamide B, a brominated alkaloid from the bryozoan *Amathia tortuosa* and its effects on Parkinson's disease cells
1265 // N // kororamide B // induces phenotypic signature on Parkinson's disease cells indicative of vesicular trafficking // * // *

896 Bryozoa *Bugula flabellata*, *Bugulina flabellata* // Big Glory Bay, Stewart Is., New Zealand // Isolation and stereospecific synthesis of janolusimide B from a New Zealand collection of the bryozoan *Bugula flabellata*
1266 // N // janolusimide B // not tested // * // *

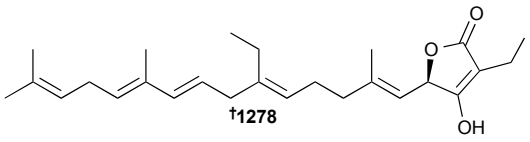
899 Bryozoa *Bugula neritina* // Daya Bay, China // Cytotoxic bryostatin derivatives from the South China Sea bryozoan *Bugula neritina*
1267 // N // bryostatin 21 // mod. activity vs 2 HTCL // * // *
1268 // N // 9-*O*-methylbryostatin 4 // inactive // * // *
1269 // N // 9-*O*-methylbryostatin 16 // mod. activity vs 2 HTCL (as a 3: 2 mixture with **1270)** // * // *
1270 // N // 9-*O*-methylbryostatin 17 // mod. activity vs 2 HTCL (as a 2: 3 mixture with **1269)** // * // *

903 Bryozoa *Cryptosula pallasiana* // Huang Is., Qingdao City, Shandong Province, China // Studies on the chemical constituents from marine bryozoan *Cryptosula pallasiana*
1271 // M // *p*-methylsulfonylmethyl-phenol // inactive // * // **s198**
883 // M // 7-bromoquinolin-4(1*H*)-one // inactive // same as **883** in ref. **607** (simultaneous reporting) // *
1272 // M // monoheneicosanoin // not tested // * // **s199**

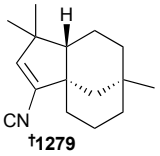
906 Bryozoa *Amathia wilsoni* // Eskitis Nature Bank // Synthesis of marine brominated alkaloid amathamide F: a palladium-catalyzed enamide synthesis
1273 // R // amathamide F // not tested // * // **s200**



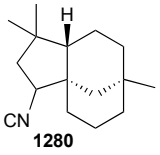
1274 R_1 = OH, R_2 = H, R_3 = Me, R_4 = H
1275 R_1 = R_2 = H, R_3 = Me, R_4 = OH
1276 R_1 = OH, R_2 = Me, R_3 = R_4 = H
1277 R_1 = H, R_2 = Me, R_3 = H, R_4 = OH



†**1278**



†**1279**



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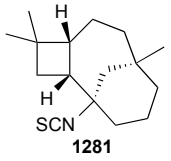

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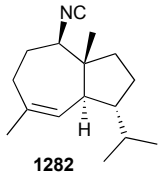

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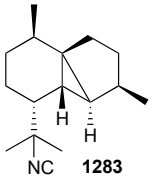
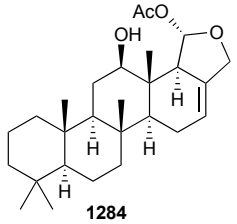
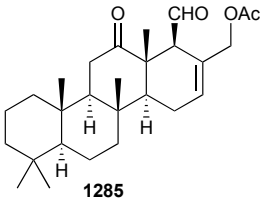


1283



1284



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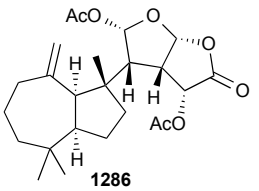
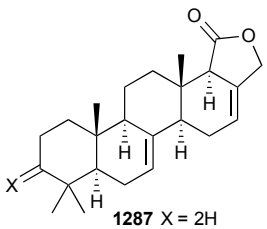


1286

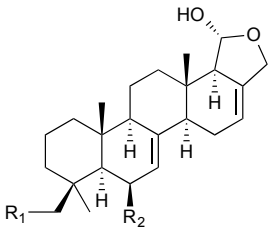
907 Mollusca *Mytilus edulis* // * // Structure elucidation, relative LC–MS response and in vitro toxicity of azaspiracids 7–10 isolated from mussels (*Mytilus edulis*)
1274 // N // azaspiracid-7 // not tested // * // *
1275 // N // azaspiracid-8 // cytotox. towards Jurkat cell line // * // *
1276 // N // azaspiracid-9 // cytotox. towards Jurkat cell line // * // *
1277 // N // azaspiracid-10 // cytotox. towards Jurkat cell line // * // *

912 Mollusca *Charcotia granulosa* // Deception and Livingston Is., Antarctica // Granuloside, a unique linear homosesterterpene from the Antarctic nudibranch *Charcotia granulosa*
1278 // N // granuloside // not tested // * // *

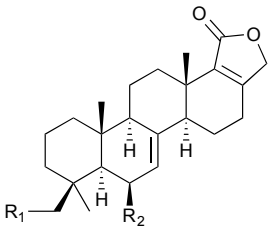
913 Mollusca *Phyllidia ocellata* // Mudjimba Is., Australia // Antimalarial isocyano and isothiocyanato sesquiterpenes with tri- and bicyclic skeletons from the nudibranch *Phyllidia ocellata*
1279 // N // (−)-(1*S*,5*S*,8*R*)-2-isocyanoclovene // mod. antimalarial activity // * // *
1280 // N // (−)-(1*S*,5*S*,8*R*)-2-isocyanoclovane // mod. antimalarial activity // * // *
1281 // N // (−)-(1*S*,2*R*,5*R*,8*R*)-1-isothiocyanatoepicaryolane // mod. antimalarial activity // * // *
1282 // N // (+)-(1*S**,4*R**,5*S**,10*S**)-4,5-*epi*-10-isocyanoisodauc-6-ene // mod. antimalarial activity // * // *
1283 // N // (+)-(1*S**,2*S**,5*S**,6*S**,7*R**,8*S**)-13-isocyanocubebane // inactive (malaria) // * // *
Mollusca *Glossodoris hikuerensis*, *Goniobranchus albonares* // Tulamben Bay, Bali, Indonesia // Oxygenated terpenes from Indo-Pacific nudibranchs: scalarane sesterterpenes from *Glossodoris hikuerensis* and 12-acetoxy dendrillolide A from *Goniobranchus albonares*
1284 // N // 19-acetyl-12-deacetyl-12-*epi*-deoxoscalarin // not tested // * // *
1285 // N // * // not tested // * // *
1286 // N // 12-acetoxy dendrillolide A // not tested // * // *



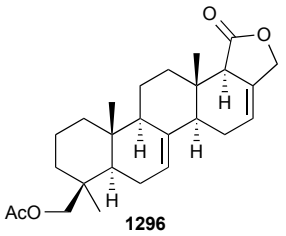
1287 X = 2H
1288 X = O



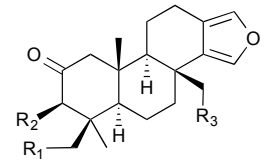
1289 $R_1 = R_2 = H$
1290 $R_1 = OH, R_2 = H$
1291 $R_1 = OAc, R_2 = H$
1292 $R_1 = H, R_2 = OAc$



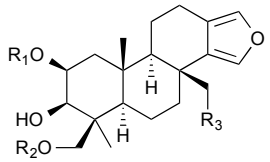
1293 $R_1 = R_2 = H$
1294 $R_1 = OAc, R_2 = H$
1295 $R_1 = H, R_2 = OAc$



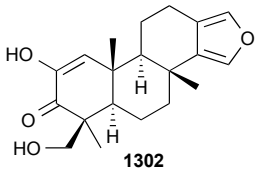
1296



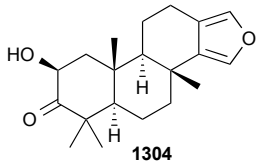
1297 $R_1 = OAc, R_2 =$ OH, $R_3 = H$
1298 $R_1 = H, R_2 =$ OAc, $R_3 = H$
1299 $R_1 = H, R_2 =$ OAc, $R_3 = H$
1305 $R_1 = OAc, R_2 =$ OH, $R_3 = OH$



1300 $R_1 = R_2 = R_3 = H$
1301 $R_1 = R_2 = Ac, R_3 = H$
1303 $R_1 = Ac, R_2 = H, R_3 = OH$

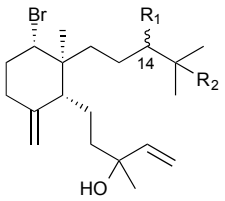


1302

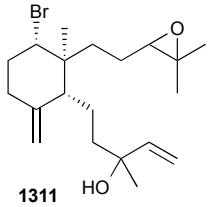


1304

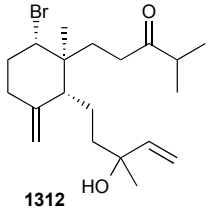
915 Mollusca *Glossodoris atromarginata*, *Doriprismatica atromarginata* // Mudjimba Is. and Inner Gneerings Reef, Mooloolaba, Australia // Isolation of norsesterterpenes and spongian diterpenes from *Dorisprismatica (= Glossodoris) atromarginata*
1287 // N // mooloolabene F // not tested // * // *
1288 // N // mooloolabene G // not tested // * // *
1289 // N // mooloolabene H // not tested // * // *
1290 // N // mooloolabene I // not tested // * // *
1291 // N // mooloolabene J // not tested // * // *
1292 // N // mooloolabene K // not tested // * // *
1293 // N // mooloolabene L // not tested // * // *
1294 // N // mooloolabene M // not tested // * // *
1295 // N // mooloolabene N // not tested // * // *
1296 // N // mooloolabene O // not tested // * // *
1297 // N // * // not tested // * // *
1298 // N // * // not tested // * // *
1299 // N // * // not tested // * // *
1300 // N // * // not tested // * // *
1301 // N // * // not tested // * // *
1302 // N // * // not tested // * // *
1303 // N // * // not tested // * // *
1304 // N // * // not tested // * // *
1305 // N // * // not tested // * // *



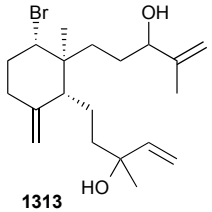
1306 R_1 = OH, R_2 = Cl
1307,1308 R_1 = Br, R_2 = OH (epimers at 14)
1309 R_1 = R_2 = OH
1310 R_1 = OMe, R_2 = OH



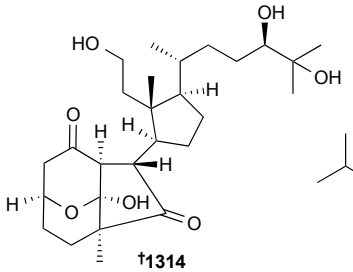
1311



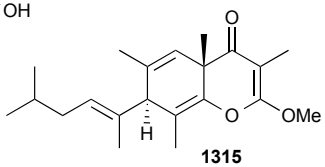
1312



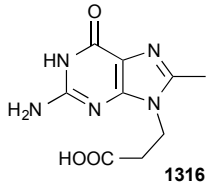
1313



†**1314**

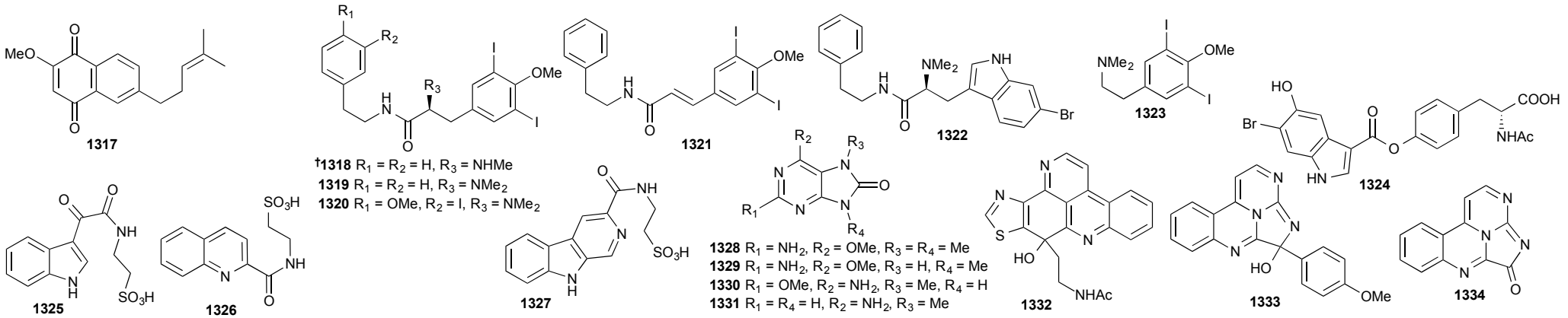


1315



1316

916 Mollusca *Aplysia depilans* // Skyros Is., Greece // Dactylomelane diterpenes from the sea hare *Aplysia depilans*
1306 // N // * // not cytotox. (5 HTCL) // * // *
1307 // N // * // not cytotox. (5 HTCL) // * // *
1308 // N // * // not cytotox. (5 HTCL) // epimer at C-14 of **1307** // *
1309 // N // * // not cytotox. (5 HTCL) // * // *
1310 // N // * // not cytotox. (5 HTCL) // * // *
1311 // N // * // not cytotox. (5 HTCL) // * // *
1312 // N // * // not cytotox. (5 HTCL) // * // *
1313 // N // * // not cytotox. (5 HTCL) // * // *
917 Mollusca *Aplysia kurodai* // Shima peninsula, Japan // Aplysiasecosterol A: a 9,11-secosteroid with an unprecedented tricyclic γ-diketone structure from the sea hare *Aplysia kurodai*
1314 // N // aplysiasecosterol A // mild cytotox. (HL-60) // * // *
918 Mollusca *Elysia crispata* // Mochima, Venezuela // Is phototridachiahydropyrone a true natural product?
1315 // M // phototridachiahydropyrone // not tested // * // **s201**
932 Mollusca *Conus genuanus* // São Vicente Is., Cape Verde Archipelago // Small molecules in the cone snail arsenal
1316 // N // genuanine // causes paralysis (mice) // * // *



934 Chordata *Aplidium scabellum* // Rabbit Is., New Zealand // Bio-inspired dimerisation of prenylated quinones: synthesis of the meroterpenoid natural products, the scabellones
1317 // N // scabellone E // not tested // * // *

935 Chordata *Aplidium* sp. // Chuja-do, S. Korea // Amino acid-derived metabolites from the ascidian *Aplidium* sp.
1318 // N // apliamide A // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // abs. config. from hydrolysis and Marfeys // *
1319 // N // apliamide B // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // * // *
1320 // N // apliamide C // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // * // *
1321 // N // apliamide D // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // * // *
1322 // N // apliamide E // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // * // *
1323 // N // apliamine A // weak to mod. activity against normal cell line, 2HTCL and Na^+/K^+-ATPase enzyme. No AB activity. // * // *

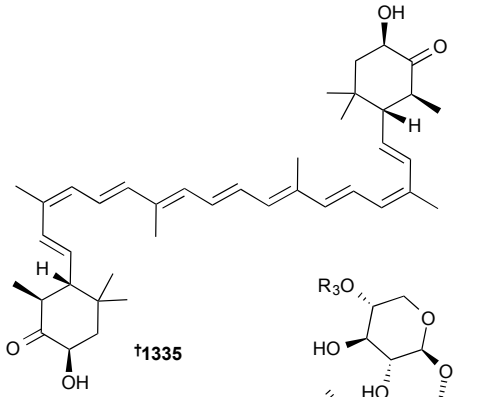
936 Chordata *Didemnum* sp. // Haegeumgang, Geoje, S. Korea // A novel bromoindole alkaloid from a Korean colonial tunicate *Didemnum* sp.
1324 // N // 16-*epi*-18-acetyl herdmanine D // no AB or farnesoid-X receptor activity. // abs. config. based upon comparison with related compound // *

937 Chordata *Cnemidocarpa stolonifera* // Peel Is., Australia // Isolation and total syn. of stolonines A–C, unique taurine amides from the Aust. marine tunicate *Cnemidocarpa stolonifera*
1325 // N // stolonine A // inactive PC3 HTCL (20 μM) but induced cellular effects in high-content assay. // synthesised // *
1326 // N // stolonine B // inactive PC3 HTCL // synthesised // *
1327 // N // stolonine C // inactive PC3 HTCL (20 μM) but induced cellular effects in high-content assay. // synthesised // *

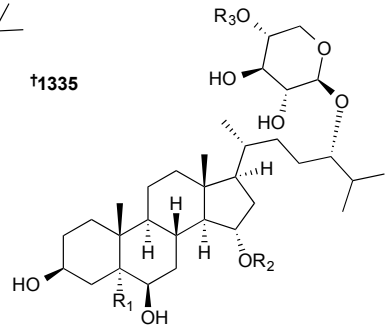
938 Chordata *Symplegma rubra* // Yanbu, Saudi Arabia // New purine alkaloids from the Red Sea marine tunicate *Symplegma rubra*
1328 // N // 6-methoxy-7,9-dimethyl-8-oxoguanine // inactive towards 4 kinases. // * // *
1329 // N // 6-methoxy-9-methyl-8-oxoguanine // inactive towards 4 kinases. // * // *
1330 // N // 2-methoxy-7-methyl-8-oxoadenine // inactive towards 4 kinases. // * // *
1331 // M // 7-methyl-8-oxoadenine // inactive towards 4 kinases. // * // *

939 Chordata // PhuQuok, Vietnam // Sagitol D, a new thiazole containing pyridoacridine alkaloid from a Vietnamese ascidian
1332 // N // sagitol D // antioxidant (weak) // * // *

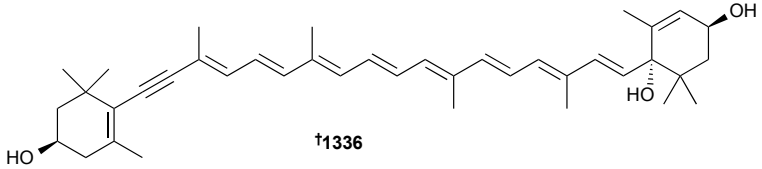
940 Chordata *Eudistoma* sp. // Koror/Airai Channel, Palau // Structural elucidation and synthesis of eudistidine A: an unusual polycyclic marine alkaloid that blocks interaction of the protein binding domains of p300 and HIF-1α
1333 // N // eudistidine A // p300-HIF-1α inhib. // * // *
1334 // N // eudistidine B // inactive // * // *



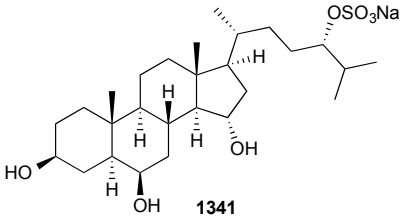
†1335



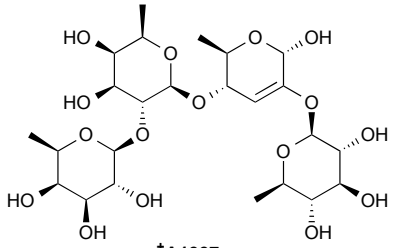
1338 $R_1 = R_3 = H$, $R_2 = SO_3Na$
1339 $R_1 = R_2 = H$, $R_3 = SO_3Na$
1340 $R_1 = OH$, $R_2 = H$, $R_3 = SO_3Na$



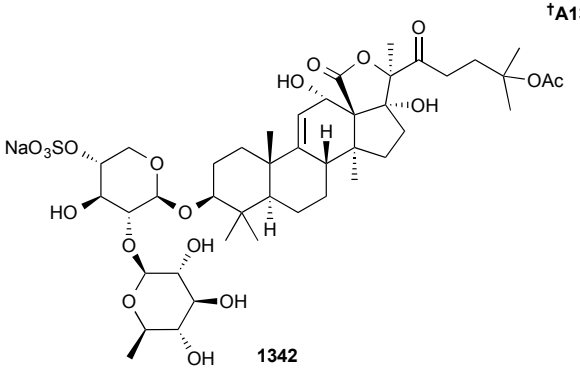
†1336



1341



†A1337



1342

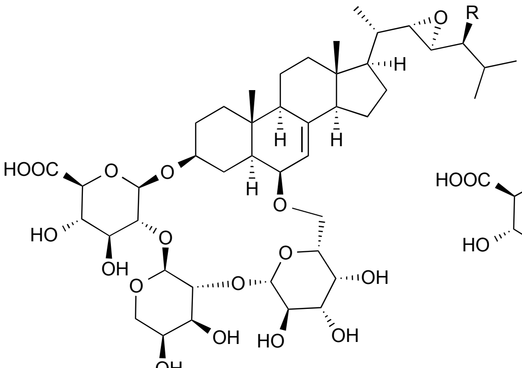
971 Echinodermata *Plesiocolochirus minutus* // Ootsuki coast, Kochi Prefecture, Japan // A new carotenoid, 9Z,9′Z-tetrahydroastaxanthin, from the sea cucumber *Plesiocolochirus minutus*
1335 // N // 9*Z*,9′*Z*-(3*R*,5*S*,6*S*,3′*R*,5′*S*,6′*S*)-tetrahydroastaxanthin // not tested // abs. config. via CD and NOESY // *

973 Echinodermata *Acanthaster planci* // Ootsuki coast, Kochi Prefecture, Japan // Total synthesis of gobiusxanthin stereoisomers and their application to determination of absolute configurations of natural products: revision of reported absolute configuration of epigobiusxanthin
1336 // R // 6'-epigobiusxanthin // not tested // * // **s202**

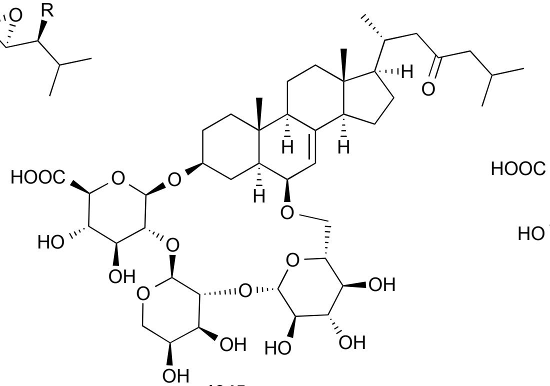
974 Echinodermata *Asterias rollestoni* // * // Asterolloside, a novel enolic saccharide from the sea star *Asterias rollestoni* Bell
1337 // N // asterolloside // mod. α-glucosidase inhib. // * // *

975 Echinodermata *Leptasterias ochotensis* // Bolshoy Shantar Is., Russia // Four new sulfated polar steroids from the Far Eastern starfish *Leptasterias ochotensis*: structures and activities
1338 // N // leptaochotensoside A // inhibits colony formation of T-47D cells. weak inhib. of MAP kinases. // * // *
1339 // N // leptaochotensoside B // inactive // * // *
1340 // N // leptaochotensoside C // inactive // * // *
1341 // N // (24*S*)-5α-cholestane-3β,6β,15α,24-tetraol 24-*O*-sulfate // inactive // * // *

976 Echinodermata *Holothuria moebii* // Turtle Islet, Guangdong Province, China // Bioactive sulfated saponins from sea cucumber *Holothuria moebii*
1342 // N // 3-*O*-[β-D-quinovopyranosyl-(1 → 2)-4-sodium sulfato-β-D-xylopyranosyl]-25-acetoxy-22-oxo-9(11)-holostene-3β,12α,17α-triol // activity against glioma cell lines. // * // *



1343 R = H
1344 R = Me



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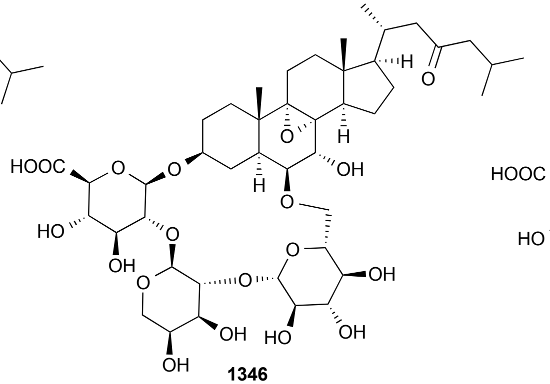

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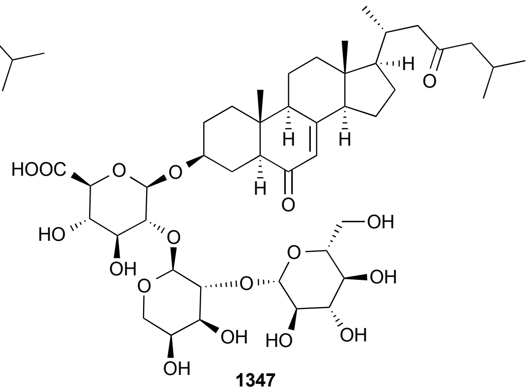
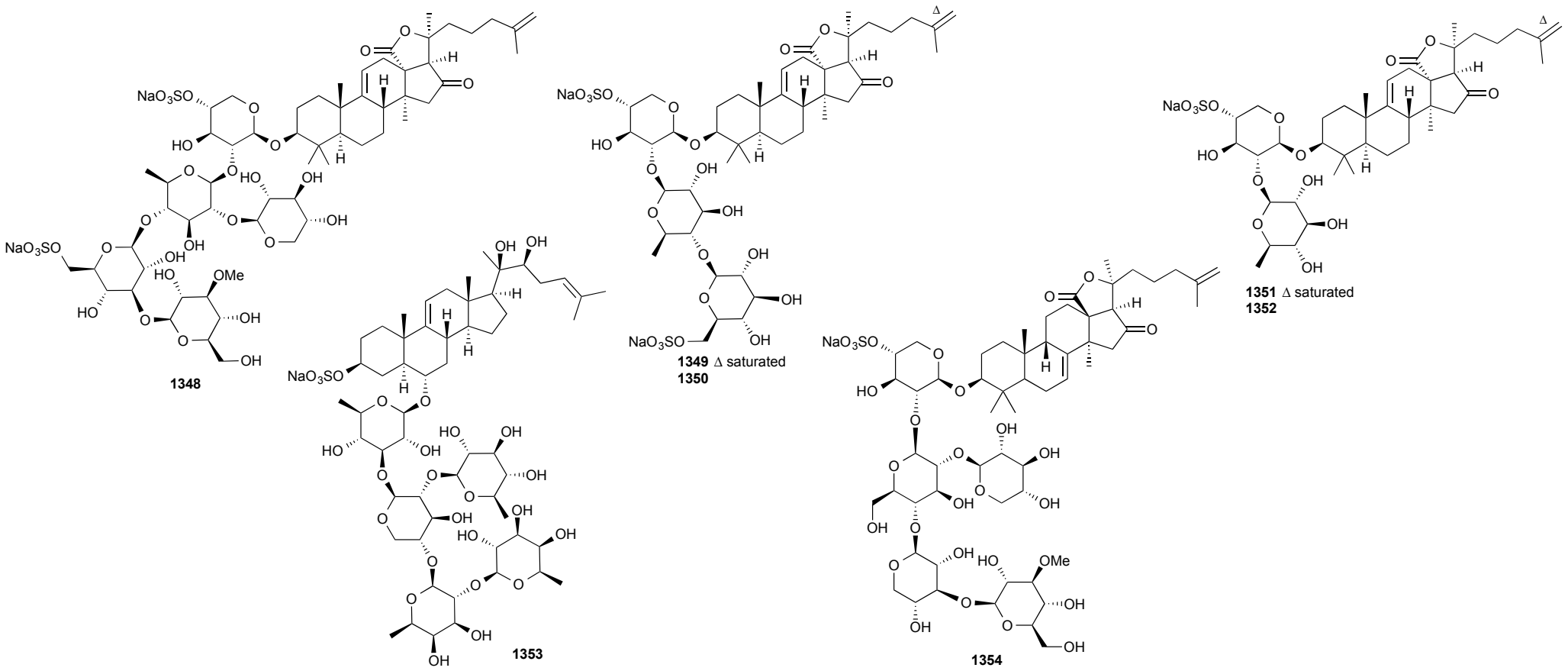
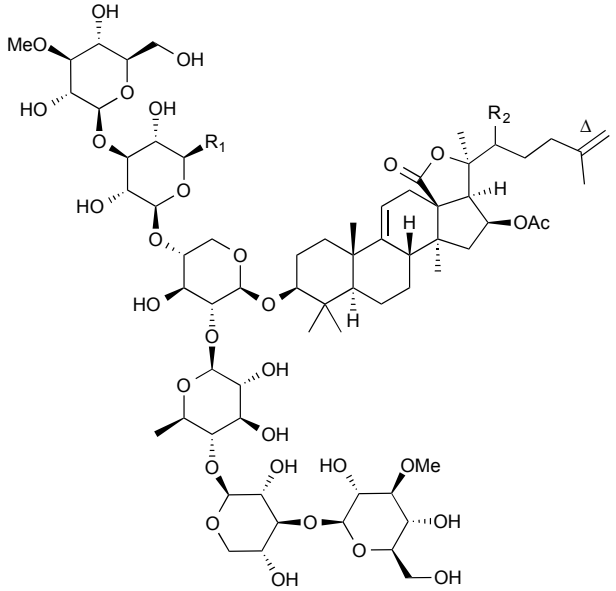


1347

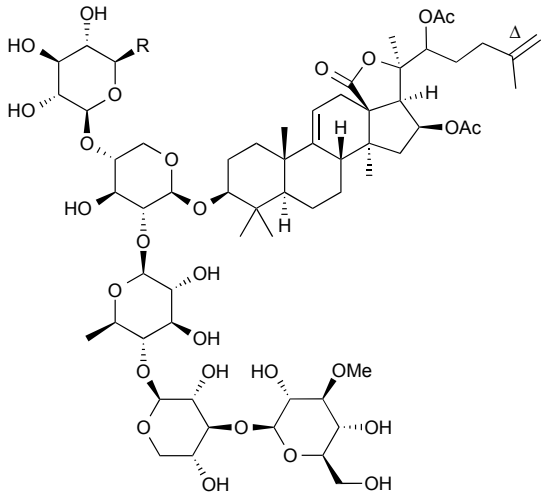
977 Echinodermata *Echinaster luzonicus* // Van Phong Bay, Vietnam // Cyclic steroid glycosides from the starfish *Echinaster luzonicus*: structures and immunomodulatory activities
1343 // N // luzonicoside B // not tested // * // *
1344 // N // luzonicoside C // not tested // * // *
1345 // N // luzonicoside D // ineffective ROS and NO generator in murine macrophage cell line. // * // *
1346 // N // luzonicoside E // not tested // * // *
1347 // N // luzonicoside F // not tested // * // *



978 Echinodermata *Cercodemas anceps* // Co To, Quangninh, Vietnam // Cytotoxic triterpene saponins from *Cercodemas anceps*
1348 // N // cercodemasoide A // mod. cytotox. towards 5 HTCL // * // *
1349 // N // cercodemasoide B // mod. cytotox. towards 5 HTCL // * // *
1350 // N // cercodemasoide C // mod. cytotox. towards 5 HTCL // * // *
1351 // N // cercodemasoide D // mod. cytotox. towards 5 HTCL // * // *
1352 // N // cercodemasoide E // mod. cytotox. towards 5 HTCL // * // *
979 Echinodermata *Culcita novaeguineae* // Quang Ninh, Vietnam // Asterosaponins and glycosylated polyhydroxysteroids from *Culcita novaeguineae* and their cytotoxic activities
1353 // N // novaeguinoside E // inactive (HTCL) // * // *
980 Echinodermata *Cucumaria japonica* // Peter the Great Gulf // Cucumarioside E from the Far Eastern sea cucumber *Cucumaria japonica* (Cucumariidae, Dendrochirotida), new minor monosulfated holostane triterpene pentaoside with glucose as the second monosaccharide residue
1354 // N // cucumarioside E // not tested // * // *

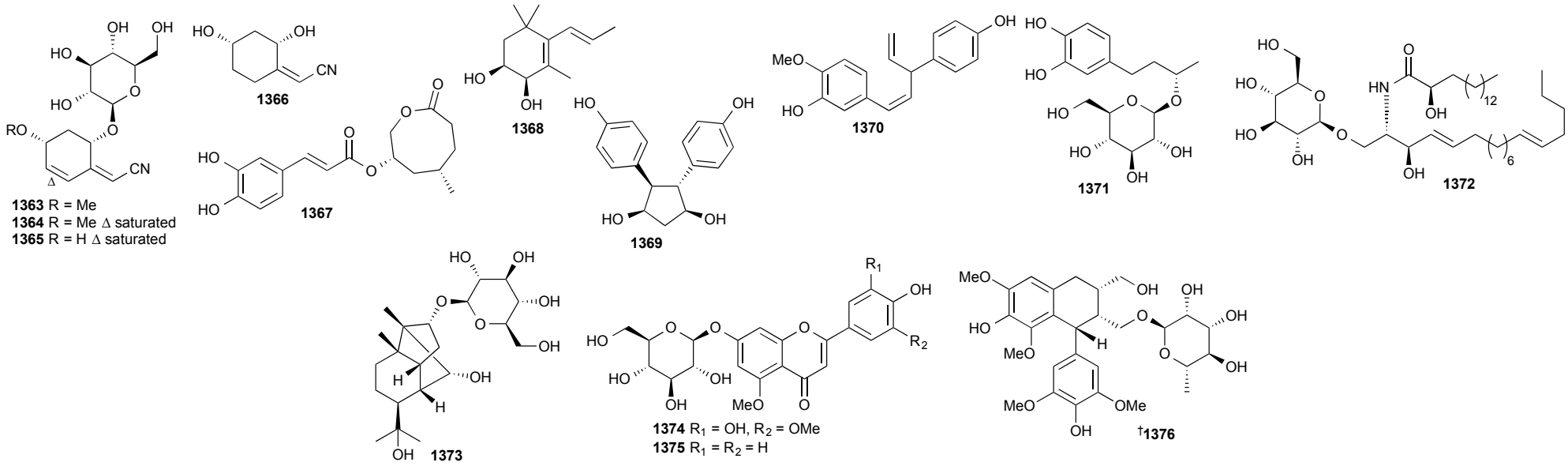


1355 R_1 = CH_2OH, R_2 = OH
1360 R_1 = H, R_2 = OAc
1361 R_1 = Me, R_2 = OAc, Δ saturated
1362 R_1 = Me, R_2 = OAc

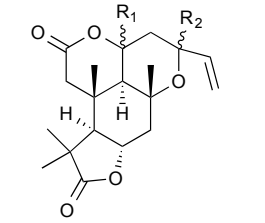


1356 R = H, Δ saturated
1357 R = H
1358 R = Me, Δ saturated
1359 R = Me

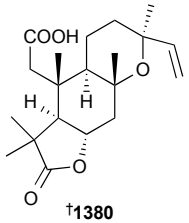
981 Echinodermata *Cladolabes schmeltzii* // Nha Trang Gulf, Vietnam // Structures and biological activities of cladolosides C3, E1, E2, F1, F2, G, H1 and H2, eight triterpene glycosides from the sea cucumber *Cladolabes schmeltzii* with one known and four new carbohydrate chains
1355 // N // cladoloside C3 // cytotox. and haemolytic // * // *
1356 // N // cladoloside E1 // cytotox. and haemolytic // * // *
1357 // N // cladoloside E2 // cytotox. and haemolytic // * // *
1358 // N // cladoloside F1 // cytotox. and haemolytic // * // *
1359 // N // cladoloside F2 // cytotox. and haemolytic // * // *
1360 // N // cladoloside G // cytotox. and haemolytic // * // *
1361 // N // cladoloside H1 // cytotox. and haemolytic // * // *
1362 // N // cladoloside H2 // cytotox. and haemolytic // * // *



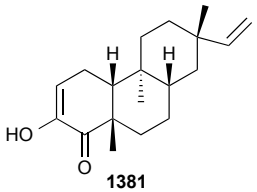
1003 Tracheophyta *Bruguiera gymnorhiza* // Beilun, Guangxi Province, China // Four new cyclohexylideneacetonitrile derivatives from the hypocotyl of mangrove (*Bruguiera gymnorrhiza*)
1363 // N // menisdaurin B // mild anti-hepatitis B virus activity. // * // *
1364 // N // menisdaurin C // mild anti-hepatitis B virus activity. // * // *
1365 // N // menisdaurin D // mild anti-hepatitis B virus activity. // * // *
1366 // N // menisdaurin E // mild anti-hepatitis B virus activity. // * // *
1004 Tracheophyta *Avicennia marina* // Beihai City, Guangxi Province, China // Two new secondary metabolites from the fruits of mangrove *Avicennia marina*
1367 // N // maricaffeolylide A // mild anti-oxidant // * // *
1368 // N // maricyclohexene A // not tested // * // *
1005 Tracheophyta *Sonneratia ovata* // Can Gio mangrove forest, Ho Chi Minh City, Vietnam // Chemical constituents from *Sonneratia ovata* Backer and their in vitro cytotoxicity and acetylcholinesterase inhibitory activities
1369 // N // sonnerphenolic A // not tested // * // *
1370 // N // sonnerphenolic B // not tested // * // *
1371 // N // sonnerphenolic C // mildly cytotox. to MCF-7 // * // *
1372 // N // sonnercerebroside // not tested // * // *
1006 Tracheophyta *Kandelia candel* // Ha Long, Quang Ninh Province, Vietnam // Chemical constituents from *Kandelia candel* with their inhibitory effects on pro-inflammatory cytokines production in LPS-stimulated bone marrow-derived dendritic cells (BMDCs)
1373 // N // kandelside // not tested // * // *
1007 Tracheophyta *Bruguiera gymnorhiza* // Tambon NongSano, Amphoe Mueang, Thailand // 5-Methyl ether flavone glucosides from the leaves of *Bruguiera gymnorrhiza*
1374 // N // 7,4',5'-trihydroxy-5,3'-dimethoxyflavone 7-*O*-β-D-glucopyranoside // not tested // * // *
1375 // N // 7,4'-dihydroxy-5-methoxyflavone 7-*O*-β-D-glucopyranoside // not tested // * // *
1376 // M // aryl-tetralin lignan rhamnoside // not tested // * // **s203**



†**1377** R_1 = ····H, R_2 = ▬ Me
†**1378** R_1 = ▬ H, R_2 = ▬ Me
†**1379** R_1 = ▬ H, R_2 = ····Me



†**1380**



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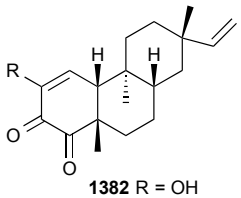
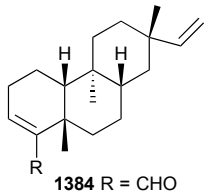
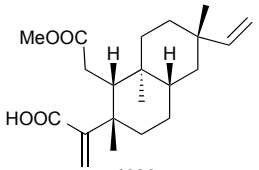


1382 R = OH
1383 R = H



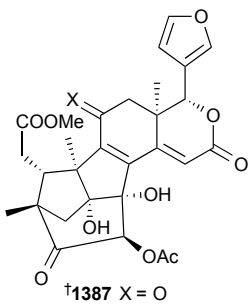
1384 R = CHO
1385 R = COOH



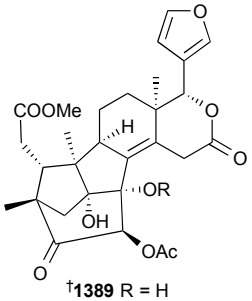
1386

1008 Tracheophyta *Excoecaria agallocha* // Nizampatnam coast, India // Epimeric excolides from the stems of *Excoecaria agallocha* and structural revision of rhizophorin A
1377 // R // excolide A/rhizophorin A // mild cytotox. to 4 HTCL panel // * // **s204**
1378 // N // 11-*epi*-excolide A // mild cytotox. to 4 HTCL panel // * // *
1379 // N // 11,13-di-*epi*-excolide A // mild cytotox. to 4 HTCL panel // * // *
1380 // N // excolide B // mild cytotox. to 4 HTCL panel // * // *

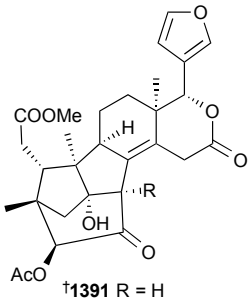
1009 Tracheophyta *Ceriops tagal* // Hainan Is., China // Dolabrane-type diterpenes from the mangrove plant *Ceriops tagal* with antitumor activities
1381 // N // tagalene A // inactive towards panel of 5 HTCL // * // *
1382 // N // tagalene B // mildly cytotox. to HCT-8 // * // *
1383 // N // tagalene C // inactive towards panel of 5 HTCL // * // *
1384 // N // tagalene D // inactive towards panel of 5 HTCL // * // *
1385 // N // tagalene E // inactive towards panel of 5 HTCL // * // *
1386 // N // tagalene F // inactive towards panel of 5 HTCL // * // *



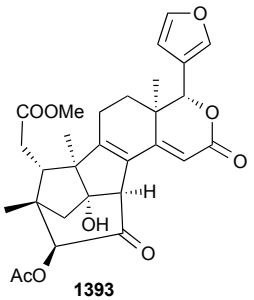
†**1387** X = O
†**1388** X = 2H



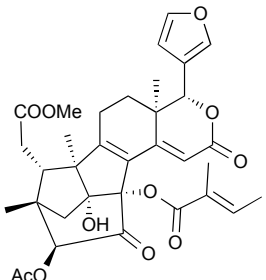
†**1389** R = H
†**1390** R = Et



†**1391** R = H
†**1392** R = OEt



1393



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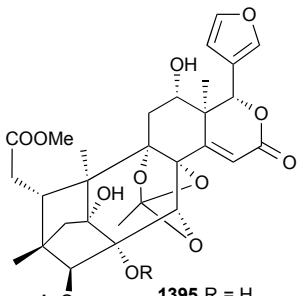
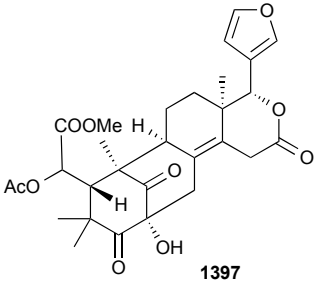


1395 R = H
1396 R = Ac



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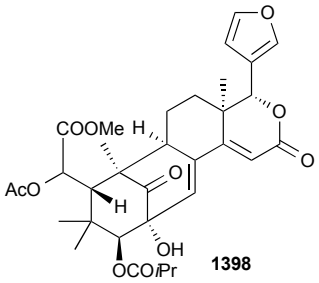

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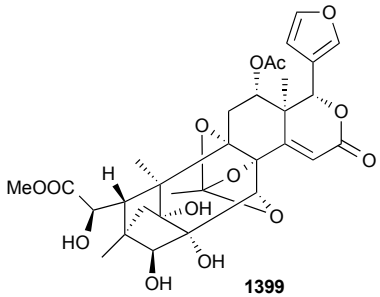

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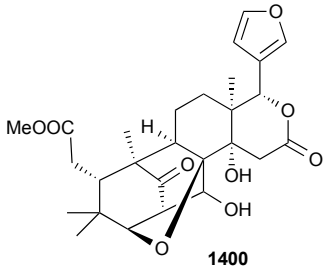

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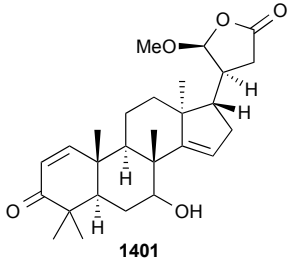

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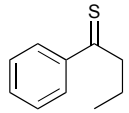
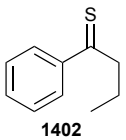


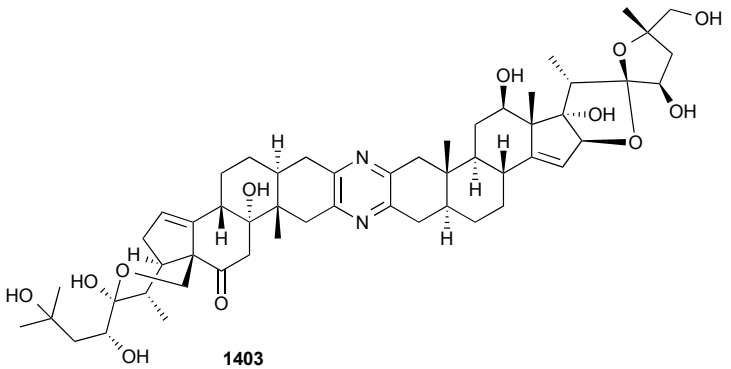
1402

1010 Tracheophyta *Xylocarpus moluccensis* // Trang Province, Thailand // Antiviral limonoids including khayanolides from the Trang mangrove plant *Xylocarpus moluccensis*
- **1387** // N // thaixylomolin G // not tested // * // *
- **1388** // N // thaixylomolin H // not tested // * // *
- ***1389*** // N // thaixylomolin I // mild AV activity towards H1N1 // * // *
- **1390** // N // thaixylomolin J // not tested // * // *
- ***1391*** // R // thaixylomolin K/moluccensin J // mild AV activity towards H1N1 // * // *
- **1392** // N // thaixylomolin L // not tested // * // *
- ***1393*** // N // thaixylomolin M // mild AV activity towards H1N1 // * // *
- **1394** // N // thaixylomolin N // not tested // * // *
- **1395** // N // 12-deacetylxyloccensin U // not tested // * // *
- **1396** // N // 2-*O*-acetyl-2-dehydroxy-12-deacetylxyloccensin U // not tested // * // *
- **1397** // N // 6-*O*-acetyl-2α-hydroxymexicanolide // not tested // * // *
- **1398** // N // 6-*O*-acetyl-6-dehydroxymoluccensin T // not tested // * // *

1011 Tracheophyta *Xylocarpus granatum* // Hainan Is., China // New limonoids from the seeds of *Xylocarpus granatum*
- **1399** // N // 2,3-dideacetylxyloccensin S // not tested // * // *
- **1400** // N // 30-deacetylxyloccensin W // not tested // * // *
- **1401** // N // 7-hydroxy-21β-methoxy-3-oxo-24,25,26,27-tetranortirucalla-1,14-diene-23(21)-lac- tone // not tested // * // *



1402



1403

1022 Tracheophyta *Cymodocea serrulata* // Tuticorin, India // Isolation of a novel antibacterial phenyl thioketone from the seagrass, *Cymodocea serrulata*
1402 // N // phenyl thioketone // * // spectroscopic data not consistent with proposed structure // *

1023 Hemichordata *Cephalodiscus gilchristi* // South Africa // The cephalostatins. 24. Isolation, structure, and cancer cell growth inhibition of cephalostatin 20
1403 // N // cephalostatin 20 // mod. cytotox. towards panel of HTCL // * // *

15 Bibliography

This Bibliography is for **Main article reference** and **Secondary reference** numbers in the SI document for which there are no relevant DOIs or URLs.

74 Dou Yang, Qing Yan Xu, Xian Ming Deng, Si Yang Song, Zhi Yu Hu and Zhong Hui Zheng, *Rec. Nat. Prod*., 2015, **9**, 336–341.

92 F. Can Özkaya, Erdal Bedir and E. Esin Hameş, *Rec. Nat. Prod*., 2015, **9**, 509–517.

184 Anton A. Yurchenko, Olga F. Smetanina, Anatoly I. Kalinovsky, Natalya N. Kirichuk, Mikhail V. Pivkin, Elena V. Ivanets, Ekaterina A. Yurchenko and Shamil Sh Afiyatullov, *Nat. Prod. Commun*., 2015, **10**, 1247–1297.

190 Xu-Hua Nong, Xiao-Yong Zhang, Xin-Ya Xu and Shu-Hua Qi, *Nat. Prod. Commun*., 2015, **10**, 1033–1037.

199 Pinmei Wang, Shizhe Zhao, Wanjing Ding, Feng Qiu and Jinzhong Xu, *Nat. Prod. Commun*., 2015, **10**, 1363–1367.

234 Bin Wu, Gang Chen, Zhuo-gang Liu and Yuhu Pei, *Rec. Nat. Prod*., 2015, **9**, 271–275.

242 Linwei Li, Yalu Zhang, Zhen Li, Zhiguo Yu and Tiemin Sun, *J. Mex. Chem. Soc*., 2015, **59**, 53–58.

280 Mahmoud Fahmi Elsebai, Fayrouz El Maddah, Stefan Kehraus and Gabriele M König, *Nat. Prod. Commun.*, 2015, **10**, 637–646.

284 Dan-Feng Yan, Wen-Jian Lan, Kun-Teng Wang, Lei Huang, Cai-Wu Jiang and Hou-Jin Li, *Nat. Prod. Commun*., 2015, **10**, 621–623.

368 Peipei Liu, Cong Wang, Zhenyu Lu, Tonghan Zhu, Kui Hong and Weiming Zhu, *Nat. Prod. Commun*., 2015, **10**, 2123–2129.

380 Shuang Qi, Yue Wang, Zhonghui Zheng, Qingyan Xu, Xianming Deng, *Nat. Prod. Commun*., 2015, 10, 2027–2030.

383 F. Lv, G. Daletos, W. Lin and P. Proksch, *Nat. Prod. Commun*., 2015, **10**, 1667–1670.

395 Jin Liu, Meng Xu, Ming-yi Zhu and Yun Feng, *Nat. Prod. Commun*., 2015, **10**, 1203–1208.

400 Jing Li, Yi-sheng Zhong, Jie Yuan, Xun Zhu, Yong-jun Lu, Yong-cheng Lin and Lan Liu, *Nat. Prod. Commun*., 2015, **10**, 1549–1600.

569 Takashi Kamada and Charles Santhanaraju Vairappan, *Nat. Prod. Commun*., 2015, **10**, 843–847.

623 Mousa AlTarabeen, Georgios Daletos, Weaam Ebrahim, Werner E. G. Müller, Rudolf Hartmann, Wenhan Lin and Peter Proksch, *Nat. Prod. Commun*., 2015, **10**, 1951–1954.

635 Ksenya M. Tabakmakher, Tatyana N. Makarieva, Vladimir A. Denisenko, Alla G. Guzii, Pavel S. Dmitrenok, Aleksandra S. Kuzmich and Valentin A. Stonik, *Nat. Prod. Commun*., 2015, **10**, 913–919.

644 Natchanun Sirimangkalakitti, Opeyemi J. Olatunji, Kanokwan Changwichit, Tongchai Saesong, Supakarn Chamni, Pithi Chanvorachote, Kornkanok Ingkaninan, Anuchit Plubrukarn and Khanit Suwanborirux, *Nat. Prod. Commun*., 2015, **10**, 1945–1949.

657 Nguyen Thi Cue, Hoang Le Tuan Anh, Dan Thi Thuy Hang, Nguyen Xuan Nhiem, Nguyen Hai Dang, Nguyen Hoai Nama, Pham Hai Yen, Do Cong Thung, Vu Kim Thuc, Chan Van Minh and Phan Van Kiema, *Nat. Prod. Commun*., 2015, **10**, 1341–1343.

666 Toshiyuki Hamada, Daisuke Harada, Mitsunobu Hirata, Keisuke Yamashita, Kishneth Palaniveloo, Hiroaki Okamura, Tetsuo Iwagawa, Naomichi Arima, Toshiyuki Iriguchi, Nicole J. de Voogd and Charles S. Vairappan, *Nat. Prod. Commun*., 2015, **10**, 863–867.

688 Yasunori Yaoita, Masao Kikuchi and Koichi Machida, *Nat. Prod. Commun*., 2015, **10**, 881–884.

903 Xiang-Rong Tian, Hai-Feng Tang, Yu-Shan Li, Hou-Wen Lin, Xiu-Yun Zhang, Jun-Tao Feng and Xing Zhang, *Rec. Nat. Prod*., 2015, **9**, 628–632.

914 I. Wayan Mudianta, Andrew M. White and Mary J. Garson, *Nat. Prod. Commun*., 2015, **10**, 865–873.

939 Natalia K. Utkina, *Nat. Prod. Commun*., 2015, **10**, 1547–1555.

980 Alexandra S. Silchenko, Anatoly I. Kalinovsky, Pavel S. Dmitrenok, Vladimir I. Kalinin, Andrey N. Mazeika, Natalia S. Vorobieva, Nina M. Sanina and Edward Y. Kostetsky, *Nat. Prod. Commun*., 2015, **10**, 877–957.

s21 N. N. Besednova, T. A. Kuznetsova, T. S. Zaporozhets and T. N. Zvyagintseva, *Antibiot. Khimioter*., 2015, **60**, 31–41.

s40 T. I. Orlova, V. G. Bulgakova and A. N. Polin, *Antibiot. Khimioter*., 2015, **60**, 47–59.

s44 Andrew J. Flewelling, Jessica Currie, Christopher A. Gray and John A. Johnson, *Curr. Sci*., 2015, **109**(1), 88–111.

s54 Hendrik Niemann, Andreas Marmann, Wenhan Lin and Peter Proksch, *Nat. Prod. Commun*., 2015, **10**(1), 219–250.

s57 Vladimir I. Kalinin, Sergey A. Avilov, Alexandra S. Silchenko and Valentin A. Stonik, *Nat. Prod. Commun*., 2015, **10**(1), 21–27.

s88 H. Hasegawa, J. Sato, T. Asaoka and T. Nakajima, Ikarugamycin Derivative. Jpn. Patent JPS 6345280, 26 February 1988.

s94 Kawabata Yoshitaka, Mochida Kenichi, Nishishima Miyuki, Sugi Masato, *Jpn. Kokai Tokkyo Koho*, 2000, JP 2000245497 A 20000912.

s97 Z. Yang, Y. Yang, Y. Zhang, L. X. Zhao, L. H. Xu and Z. T. Ding, *Yao Xue Xue Bao* 2012, **47**, 364−366.

s102 T. F. Solov'eva, B. P. Baskunov, O. V. Kiseleva and A. G. Kozlovskii, *Mikrobiologiya*, 1992, **61**, 395–403.

s118 CAS Registry Number: 1083195-01-0, Aurora Screening Library, SciFinder database, September 2016.

s124 H. Nakano, M. Hara, T. Mejiro, K. Ando, Y. Saito and M. Morimoto, *Jpn. Kokai Tokkyo Koho*, 1990, JP 02218686 A 19900831.

s131 CAS Registry Number: 913690-77-4, K05.567.876, Aurora Screening Library, Aurora Fine Chemicals LLC, 7 Apr 2016.

s139 T. Jiang, L. Tian, A. Guo, H. Fu, Y. Pei and W. Lin, *Yaoxue Xuebao*, 2002, **37**, 271–274.

s140 N. K. Bose and D. N. Chaudhury, *J. Indian Chem. Soc*., 1966, **43**, 411–415.

s198 CAS Registry Number: 342403-17-2, A07.175.048, Aurora Screening Library, Aurora Fine Chemicals LLC, 20 Oct 2016.

s199 J. S. Kim, S. S. Kang, K. H. Son, H. W. Chang, H. P. Kim and K. H. Bae, *Saengyak Hakhoechi*, 2002, **32**, 105–109.