Marine natural products (2023) NPR code link

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 the † symbol. 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 the // symbol (***** 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); **A** for artefact), **Compound name**, **Biological activity** and **Other information**. To assist 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** numbers are hyperlinked to the relevant DOI or URL.

1.1 Abbreviations

In the **Biological activity and other information** section, the following abbreviations have been used:

abs. config.	absolute configuration
AChE	acetylcholine esterease
activ.	activity
anal.	analysis
anti-inflam.	antiinflammatory
antioxid.	antioxidant
bact.	Bacteria
CBL-b	casitas B lymphoma-b
CL	cell line
cytotox.	cytotoxicity/cytotoxic
eIF4E	eukaryotic translation initiation factor 4E
HTCL	human tumour cell line
HPV	human papillomavirus
IA	inactive
inhib.	inhibitor/inhibition/inhibitory
isol.	isolated
LXRα	Liver X receptor
MIC	minimum inhibitory concentration
M. avium	*Mycobacterium avium*
M. tuberculosis	*Mycobacterium tuberculosis*
mod.	moderate
microb.	microbial, microbe
mixt.	mixture
MTCL	murine tumour cell line
NA	neuroaminidase
NO	nitrous oxide
norm.	normal
NHCL	normal human cell line
NMCL	normal mammalian cell line
Nrf2	nuclear factor erythroid 2-related factor 2
NT	not tested
P. aeruginosa	*Pseudomonas aeruginosa*
P. falciparum	*Plasmodium falciparum*
PI3K	Phosphoinositide 3-kinase
PPAR-γ	Peroxisome Proliferator-Activated Receptor-gamma
PL	pancreatic lipase
prod.	production
pot.	potent
prod.	production
purif.	purify/purified
PTP1B	protein-tyrosine phosphatase 1B
PTP	protein-tyrosine phosphatase
rac.	racemic mixture
RANKL	receptor activator of nuclear factor kappa beta (NFkB ligand)
RT	reverse transcriptase
ref.	reference
RSV	respiratory syncytial virus
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
S. aureus	*Staphlococcus aureus*
SERCA	sarcoplasmic/endoplasmic reticulum Ca^{2+}-ATPase
stereochem.	stereochemistry
struct.	structure
synth.	synthesis/synthetic
TCL	tumour cell line
T. b. rhodesiense	*Trypanosoma brucei rhodesiense*
T. cruzi	*Trypanosoma cruzi*
TNF-α	tumour necrosis factor alpha
TRAP	tartrate-resistant acid phosphatase
TRPA1	transient receptor potential ankyrin 1
XRD	X-ray diffraction analysis

1.2 Biological activity definitions

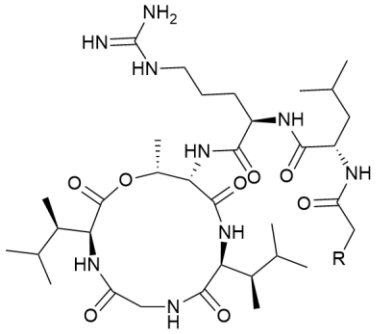
Cytotoxic, antiparasitic, antioxidant, antiinflammatory, enzyme and antiviral activity (IC_{50} <10 μM); any activity reported at a higher dose is deemed inactive (IA)

Potent (pot.) activity:	IC_{50} <100 nM
Moderate (mod.) activity:	IC_{50} <1 μM
Weak activity:	IC_{50} <10 μM

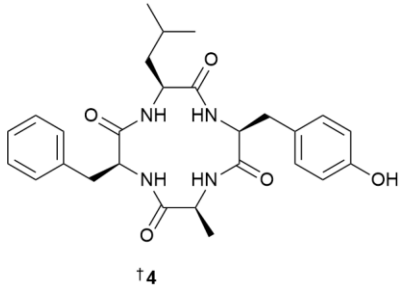
Antibacterial and antifungal activity (MIC <32 μg/mL, <64 μM based on MW 500 Da); any activity reported at a higher dose is deemed inactive (IA)

Potent (pot.) activity:	MIC <1 μg/mL
Moderate (mod.) activity:	MIC <8 μg/mL
Weak activity:	MIC <32 μg/mL

2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria



†**1** R = *i*But
†**2** R = Ph
†**3** R = $(CH_2)_3$*i*Pr



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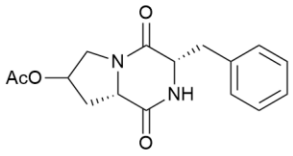

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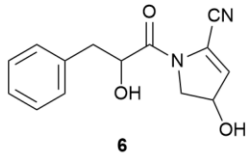

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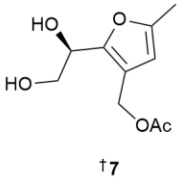

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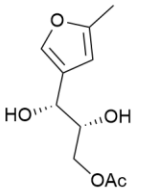

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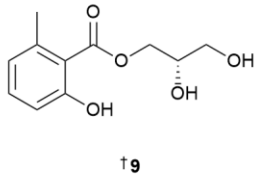


†**9**

3 Actinobacteria *Actinoalloteichus cyanogriseus* // (sponge, *Phakellia fusca*) Yongxing Is., China // LC-MS-guided isolation of cyanogripeptides A–C, cyclolipopeptides with β-methyl-leucine residues, from an *Actinoalloteichus cyanogriseus* LHW52806
1 // N // cyanogripeptide A // IA *vs* 8 HTCLs; IA *vs* 13 bact. strains.
2 // N // cyanogripeptide B // IA *vs* 8 HTCLs; IA *vs* 13 bact. strains.
3 // N // cyanogripeptide C // IA *vs* 8 HTCLs; IA to weak activ. *vs* 13 bact. strains.

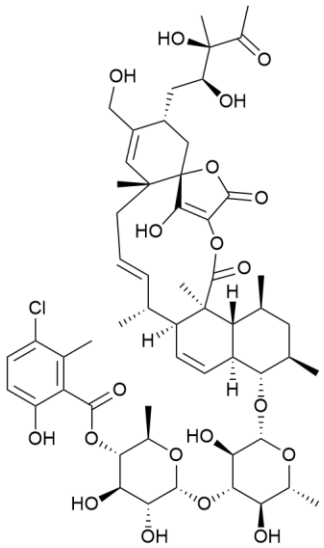
4 Actinobacteria *Arthrobacter humicola* // (composted material of marine origin) // Characterization of arthropeptide B, an antifungal cyclic tetrapeptide from *Arthrobacter humic*
4 // N // arthropeptide B // IA *vs* 1 fungal strain.

5 Actinobacteria *Janibacter* sp. // (sediment) South China Sea // Investigation on metabolites in structure and biosynthesis from the deep-sea sediment-derived actinomycete *Janibacter* sp. SCSIO 52865
5 // N // janibatide A // IA *vs* 4 bact.; IA *vs* 1 HTCL; IA for α-glucosidase inhibitory activity.

6 Actinobacteria *Nocardiopsis* sp // (krill, *Euphausia superba*) // New pyrroline isolated from Antarctic krill-derived actinomycetes *Nocardiopsis* sp. LX-1 combining with molecular networking
6 // N // nocarpyrroline A // IA *vs* 9 fungal strains.

7 Actinobacteria *Nocardiopsis* sp. // (sediment) Zhoushan Is., China // Identification of novel sphydrofuran-derived derivatives with lipid-lowering activity from the active crude extracts of *Nocardiopsis* sp. ZHD001
7 // N // nicardifuran D // IA *vs* 1 HTCL; weak inhibition of lipid droplet accumulation in HepG2 cells.
8 // N // nicardifuran E // IA *vs* 1 HTCL; weak inhibition of lipid droplet accumulation in HepG2 cells.

8 Actinobacteria *Micromonospora* sp. // (coral, *Porites lutea*) Rayong Province, Thailand // 1-(6-methylsalicyloyl)glycerol from stony coral-derived *Micromonospora* sp.
9 // N // 1-(6-methylsalicyloyl)glycerol // IA *vs* 1 NMCL; IA *vs* 4 bact. strains, IA *vs* 2 fungal strains; total synth. achieved.



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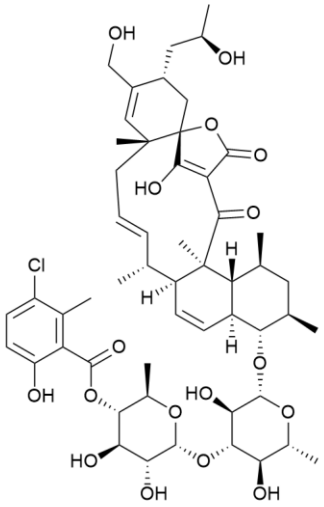

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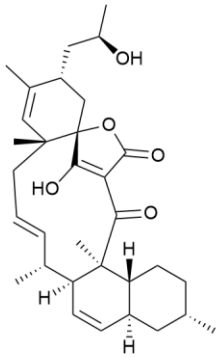

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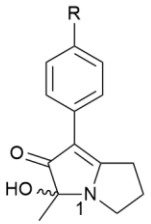
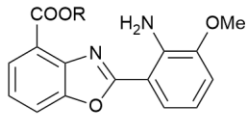
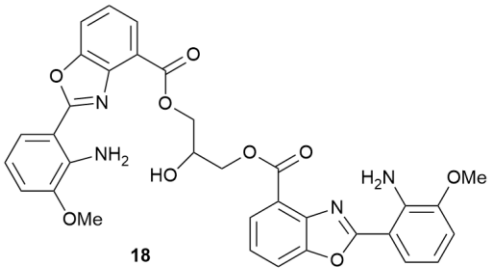


13 R = OH
14 R = H



15 R = H
16 R = $CH_2CH(OH)CH_2OH$
17 R = CH_2CH_2Ph
20 R = Me



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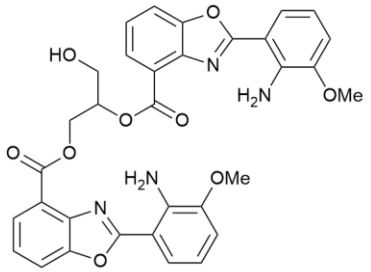

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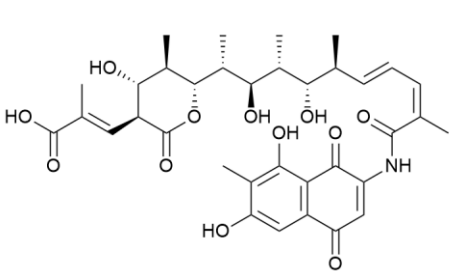
9 Actinobacteria *Micromonospora endophytica* // (sediment) Gran Canaria, Spain // New phocoenamicin and maklamicin analogues from cultures of three marine-derived *Micromonospora* strains
10 // N // phocoenamicin D // IA *vs* 1 HTCL; IA *vs* 5 bact. strains.
11 // N // phocoenamicin E // IA *vs* 1 HTCL; IA *vs* 5 bact. strains.
12 // M // maklamicin B // IA *vs* 1 HTCL, IA to mod. activ. *vs* 5 bact. strains.

10 Actinobacteria *Micromonospora* sp. // (mangrove soil) Huaniao Is., Zhejiang province, China // Phenopyrrolizins A and B, two novel pyrrolizine alkaloids from marine-derived actinomycetes *Micromonospora* sp. HU138
13 // N // phenopyrrolizin A // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains; IA *vs* 9 fungal strains; XRD.
14 // N // phenopyrrolizin B // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains; IA *vs* 9 fungal strains; XRD.

11 Actinobacteria *Micromonospora* sp. // heterologous expression in *Streptomyces albus* // Genomics-driven discovery of benzoxazole alkaloids from the marine-derived *Micromonospora* sp. SCSIO 07395
15 // N // microechmycin A // IA to mod. activ. vs 5 bact. strains.
16 // N // microechmycin B // IA vs 6 bact. strains.
17 // N // microechmycin C // IA vs 6 bact. strains.
18 // N // microechmycin D // IA vs 6 bact. strains.
19 // N // microechmycin E // IA vs 6 bact. strains.
20 // M // microechmycin F // IA vs 6 bact. strains.

2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria



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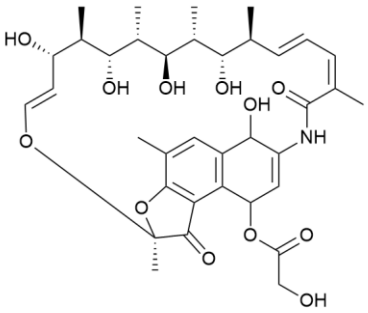

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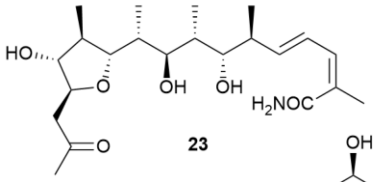

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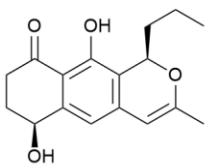

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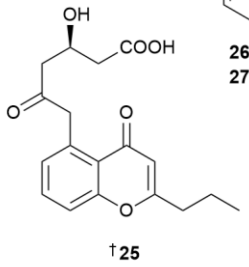

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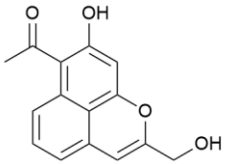
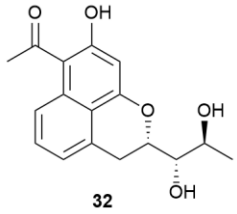


26 R = CH_2OH
27 R = CHO



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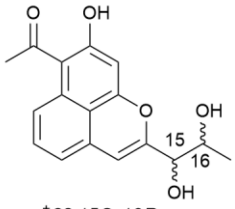
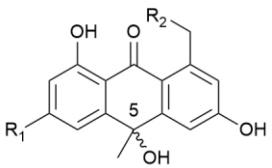


†**28** 15*S*, 16*R*
†**29** 15*R*, 16*S*
†**30** 15*S*, 16*S*
†**31** 15*R*, 16*R*

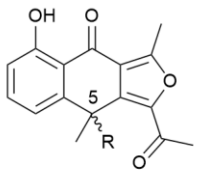
12 Actinobacteria *Salinispora arenicola* // (sediment) Dokdo Is., Republic of Korea // Rifamycin-related polyketides from a marine-derived bacterium *Salinispora arenicola* and their cytotoxic activity
21 // N // salinisporamycin C // weak cytotox. *vs* 13 HTCLs and 1 NHCL.
22 // N // salinisporamycin D // IA to weak cytotox. *vs* 13 HTCLs and 1 NHCL.
23 // N // salinifuran A // IA *vs* 13 HTCLs.

13 Actinobacteria *Streptomyces sundarbansensis* // (polychaete) Daya Bay, China // Six sets of aromatic polyketides differing in size and shape derive from a single biosynthetic gene cluster
24 // N // prealnumycin B // NT.
25 // N // phaeochromycin L // NT.

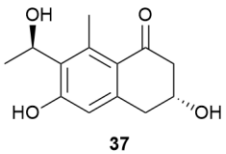
14 Actinobacteria *Streptomyces* sp. // (mangrove sediment) Nansha coastal park, Guangzhou, China // Aromatic polyketides from the mangrove-derived *Streptomyces* sp. SCSIO 40069
26 // N // RM18c // IA to mod. activ. *vs* 5 bact. strains; XRD.
27 // N // RM18d // IA to weak activ. *vs* 5 bact. strains.
28 // N // (15*S*,16*R*)-RM18e // IA *vs* 5 bact. strains.
29 // N // (15*R*,16*S*)-RM18e // IA *vs* 5 bact. strains.
30 // N // (15*S*,16*S*)-RM18f // IA *vs* 5 bact. strains; XRD.
31 // N // (15*S*,16*S*)-RM18f // IA to weak activ. *vs* 5 bact. strains.
32 // N // RM18g // NT.



33 5*R*, R_1 = H, R_2 = OH
34 5*S*, R_1 = OH, R_2 = H



†**35** 5*S*, R = OH
36 R = H



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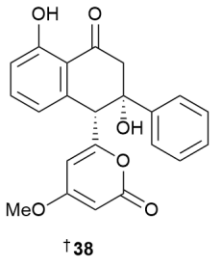

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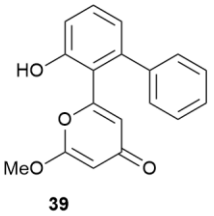

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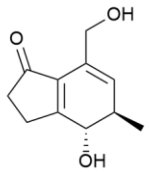

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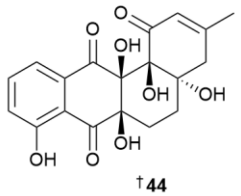

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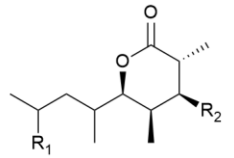
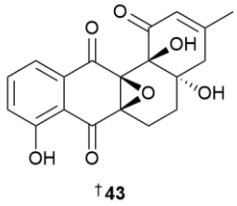


41 R_1 = OH, R_2 = H
42 R_1 = H, R_2 = OH



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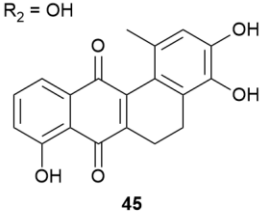

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15 Actinobacteria *Streptomyces griseorubiginosus* // (cnidarian) Pointe de Bellevue, Réunion Is. // Induction of new aromatic polyketides from the marine actinobacterium *Streptomyces griseorubiginosus* through an OSMAC approach
33 // N // (*R*)-3,8,10-trihydroxy-1-(hydroxymethyl)-10-methylanthracen-9(10*H*)-one // NT.
34 // N // (*S*)-1,3,6,10-tetrahydroxy-8,10-dimethylanthracen-9(10*H*)-one // NT.
35 // N // (*S*)-1-acetyl-5,9-dihydroxy-3,9-dimethylnaphtho[2,3-*c*]furan-4(9*H*)-one // NT.
36 // N // 1-acetyl-5-hydroxy-3,9-dimethylnaphtho[2,3-*c*]furan-4(9*H*)-one // NT.
37 // N // (*R*)-3,6-dihydroxy-7-((*R*)-1-hydroxyethyl)-8-methyl-3,4-dihydronaphthalen-1(2*H*)-one // NT.

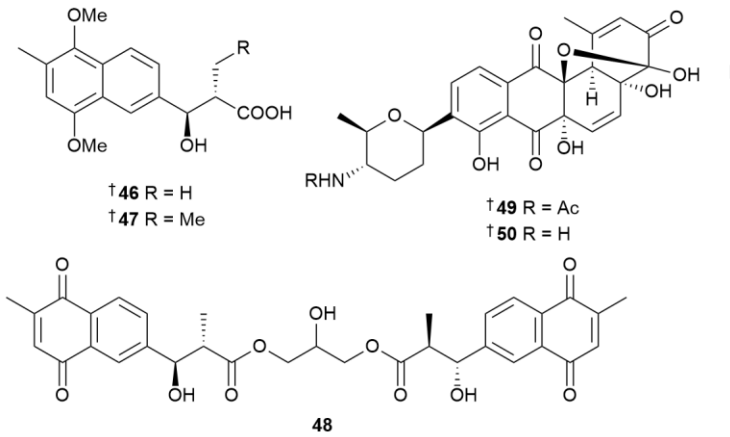
16 Actinobacteria *Streptomyces* sp. // (alga, *Ulva prolifera*) Qingdao, China // Expanding the chemical diversity of secondary metabolites produced by two marine-derived enterocin- and wailupemycin-producing *Streptomyces* strains
38 // N // wailupemycin Q // IA *vs* 3 bact. strains.
39 // N // wailupemycin R // IA *vs* 3 bact. strains.

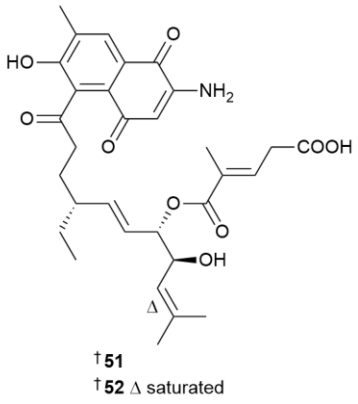
17 Actinobacteria *Streptomyces massiliensis* // (sediment) East Sea, Republic of Korea // Streptinone, a new indanone derivative from a marine-derived *Streptomyces massiliensis*, inhibits particulate matter-induced inflammation
40 // N // streptinone // weak anti-inflam. activ.

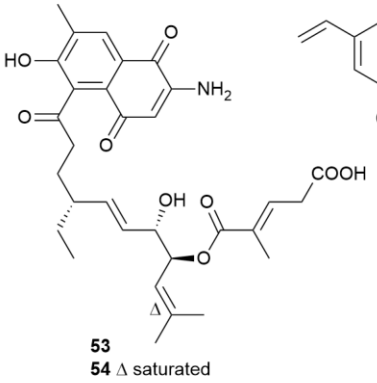
18 Actinobacteria *Streptomyces* sp. // (sediment) South China // A new δ-valerolactone produced by marine *Streptomyces* sp. YIM 13591
41 // N // 8-hydroxy invictolide 2 // IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
42 // N // 4-hydroxy-3,5-dimethyl-6-(pentan-2-yl) tetrahydro-2*H*-pyran-2-one // IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.

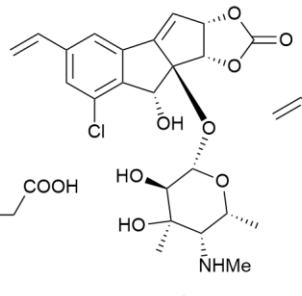
19 Actinobacteria *Streptomyces* sp. // (sediment) Naozhou Is., Zhanjiang, Guangdong Province, China // Overexpression of global regulator SCrp leads to the discovery of new angucyclines in *Streptomyces* sp. XS-16
43 // N // angumycinone E // weak to mod. cytotox. *vs* 4 HTCLs and 1 NHCL.
44 // N // angumycinone F // IA *vs* 4 HTCLs and 1 NHCL.
45 // N // kanglemycin E // IA *vs* 4 HTCLs and 1 NHCL.

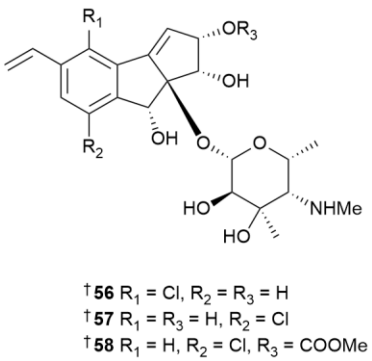
2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria









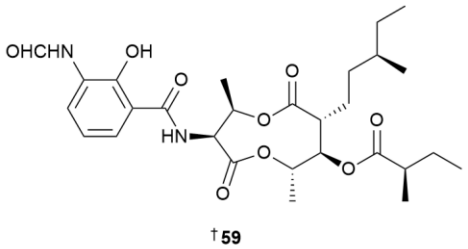


20 Actinobacteria *Steptomyces* sp. // (coral, *Dendrophylla* sp.) southern shore, central Japan // Iseoic acids and bisiseoate: three new naphthohydroquinone/naphthoquinone-class metabolites from a coral-derived *Streptomyces*
46 // N // iseoic acid A // IA *vs* 1 murine TCL; IA *vs* 5 bact. strains; IA *vs* 1 fungal strain.
47 // N // iseoic acid B // IA *vs* 1 murine TCL; IA *vs* 5 bact. strains; IA *vs* 1 fungal strain.
48 // N // bisiseoate // IA *vs* 1 murine TCL; IA *vs* 5 bact. strains; IA *vs* 1 fungal strain.

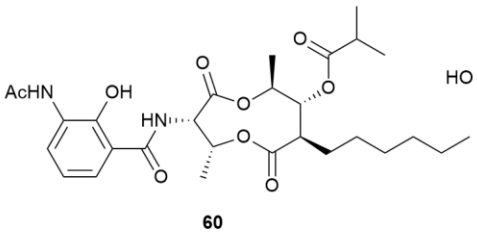
21 Actinobacteria *Streptomyces* sp. // (sediment) Tando Port, Republic of Korea // Tandocyclinones A and B, ether bridged C-glycosyl benz[*a*]anthracenes from an intertidal zone *Streptomyces* sp.
49 // N // tandocyclinone A // IA vs 6 bact. strains; IA *vs* 4 fungal strains; IA *vs M. avium*; IA *vs* 6 HTCLs.
50 // N // tandocyclinone B // IA vs 6 bact. strains; IA *vs* 4 fungal strains; IA *vs M. avium*; IA *vs* 6 HTCLs.

22 Actinobacteria *Streptomyces olivaceus* // (cold-seep mud) South China Sea // New olimycins from a cold-seep-derived *Streptomyces olivaceus*
51 // N // olimycin E // IA *vs* 3 bact. strains; IA *vs* 1 HTCL and 1 NHCL.
52 // N // olimycin F // IA *vs* 3 bact. strains; IA *vs* 1 HTCL and 1 NHCL.
53 // N // olimycin G // IA *vs* 3 bact. strains; IA *vs* 1 HTCL and 1 NHCL.
54 // N // olimycin H // IA *vs* 3 bact. strains; IA *vs* 1 HTCL and 1 NHCL.

23 Actinobacteria *Streptomyces* sp. // (sediment) Jeju Is., Republic of Korea // Jejucarbosides B–E, chlorinated cycloaromatized enediynes, from a marine *Streptomyces* sp.
55 // N // jejucarboside B // IA *vs* 5 HTCLs.
56 // N // jejucarboside C // IA *vs* 5 HTCLs.
57 // N // jejucarboside D // IA *vs* 5 HTCLs.
58 // N // jejucarboside E // mod. cytotox. *vs* 5 HTCLs.



†**59**



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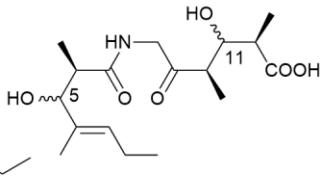
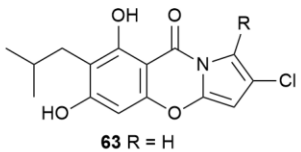
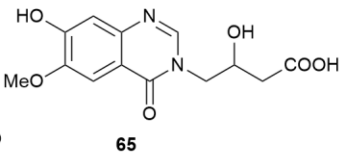


†**61** 5*S*, 11*S*
†**62** 5*R*, 11*R*



63 R = H
64 R = Cl



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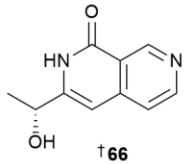


†**66**

24 Actinobacteria *Streptomyces* sp. // (sediment) South China Sea // Genome mining and molecular networking guided isolation of antimycin analogs with antifeedant activities from the deep-sea-derived *Streptomyces* sp. NA13
59 // N // antimycin Q // IA *vs Helicoverpa armigera* antifeedant activ.

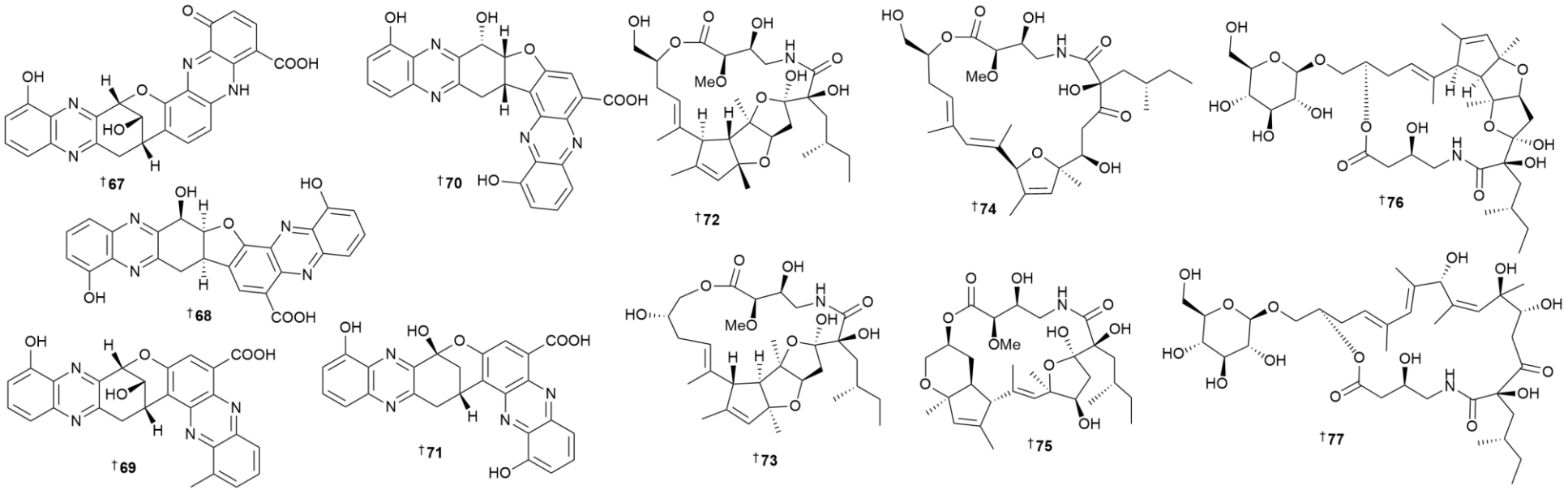
25 Actinobacteria Streptomyces sp // * // A novel antimycin analogue antimycin A2c, derived from marine *Streptomyces* sp., suppresses HeLa cells via disrupting mitochondrial function and depleting HPV oncoproteins E6/E7
60 // N // antimycin A2c // mod. to pot. activ. *vs* 11 HTCLs.

26 Actinobacteria *Streptomyces* sp. // (sediment) Kueishantao hydrothermal vent, Taiwan // Kueishanamides A and B from the hydrothermal vent sediment derived *Streptomyces* sp. WU20
61 // N // kueishanamide A // IA *vs* 2 HTCLs; IA to weak activ. *vs* 6 fungal strains.
62 // N // kueishanamide B // IA *vs* 2 HTCLs; IA to weak activ. *vs* 6 fungal strains.

27 Actinobacteria *Streptomyces zhaozhouensis* // (sediment) Dokdo Is., Republic of Korea // Pyrrole-containing alkaloids from a marine-derived actinobacterium *Streptomyces zhaozhouensis* and their antimicrobial and cytotoxic activities
63 // N // streptopyrrole B // weak cytotox. *vs* 6 HTCLs; IA to mod. activ. *vs* 6 bact. strains.
64 // N // streptopyrrole C // weak cytotox. *vs* 6 HTCLs; IA to mod. activ. *vs* 6 bact. strains.

28 Actinobacteria *Streptomyces* sp. // (sediment) La Jolla, San Diego, California // Actinoquinazolinone, a new quinazolinone derivative from a marine bacterium *Streptomyces* sp. CNQ-617, suppresses the motility of gastric cancer cells
65 // N // actinoquinazolinone // IA vs 9 HTCLs.

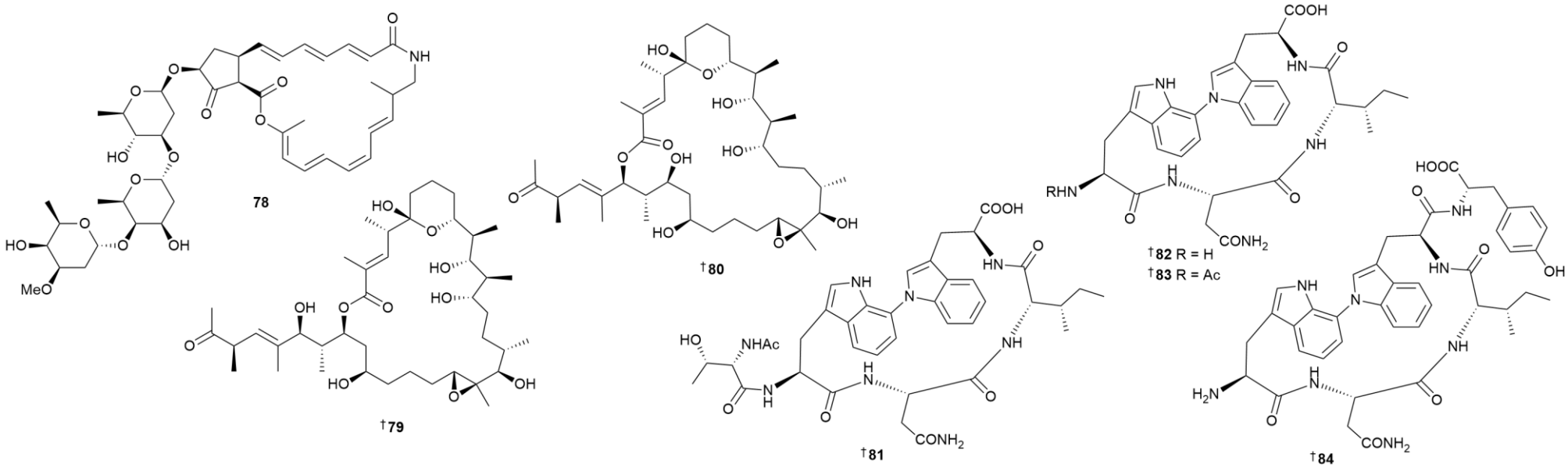
29 Actinobacteria *Streptomyces* sp. // (sediment) Mariana Trench // Streptonaphthyridine A, a new naphthyridine analogue with antiproliferative activity against human glioma cells from mariana trench-associated actinomycete *Streptomyces* sp. SY2111
66 // N // streptonaphthyridine A // IA to weak cytotox. *vs* 2 HTCLs; XRD.



30 Actinobacteria *Streptomyces* sp. // (sediment) Papua New Guinea // An ECD and NMR/DP4+ computational pipeline for structure revision and elucidation of diphenazine-based natural products
67 // N // baraphenazine H // IA *vs* inhibition of eIF4E.
68 // N // izumiphenazine E // weak inhib. of eIF4E.
69 // R // phenazinolin D // IA *vs* inhibition of eIF4E.
70 // R // izumiphenazine A // IA *vs* inhibition of eIF4E.
71 // R // baraphenazine G // IA *vs* inhibition of eIF4E.

34 Actinobacteria *Streptomyces somaliensis* // (sponge, *Haliclona* sp.) Chukchi Shelf, Arctic // Somalactams A–D: anti-inflammatory macrolide lactams with unique ring systems from an Arctic actinomycete strain
72 // N // somalactam A // IA *vs* 12 HTCLs; weak to mod. anti-inflam. activ.; XRD.
73 // N // somalactam B // IA *vs* anti-inflam.; XRD.
74 // N // somalactam C // IA *vs* anti-inflam.; XRD.
75 // N // somalactam D // IA *vs* anti-inflam.; XRD.

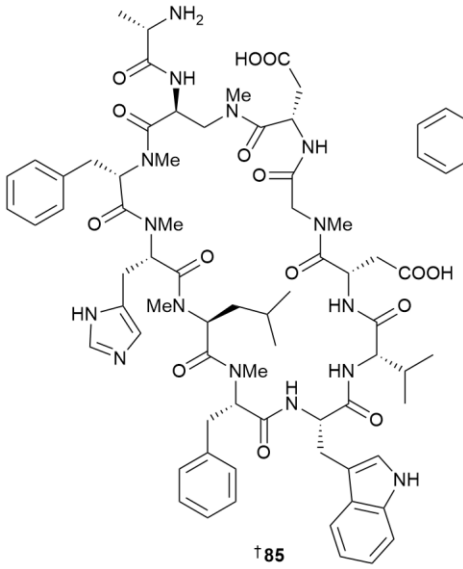
35 Actinobacteria *Streptomyces argenteolus* // (sediment) Mariana and Parece Vela Basin // Argenteolides A and B, glycosylated polyketide–peptide hybrid macrolides from an actinomycete *Streptomyces argenteolus*
76 // N // argenteolide A // IA *vs* 3 HTCLs; weak activ. *vs* 2 bact. strains.
77 // N // argenteolide B // IA *vs* 3 HTCLs; weak activ. *vs* 2 bact. strains.

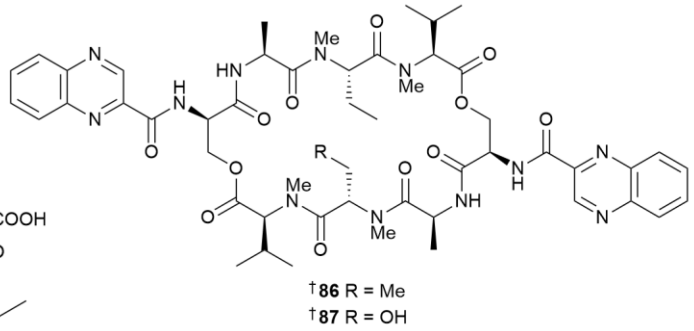


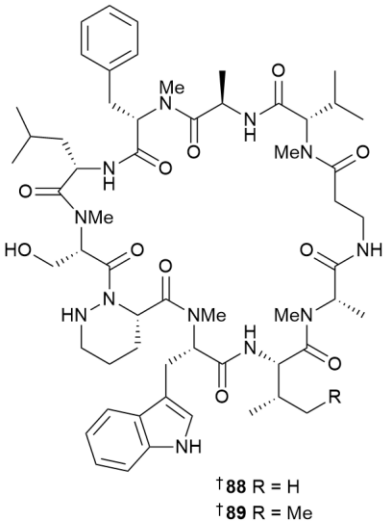
36 Actinobacteria *Streptomyces* sp. // (sediment) Tokyo Bay, Japan // Haneummycin, a new 22-membered macrolide lactam antibiotic, produced by marine-derived *Streptomyces* sp. KM77-8
78 // N // haneummycin // IA to mod. activ. *vs* 11 bact. strains.

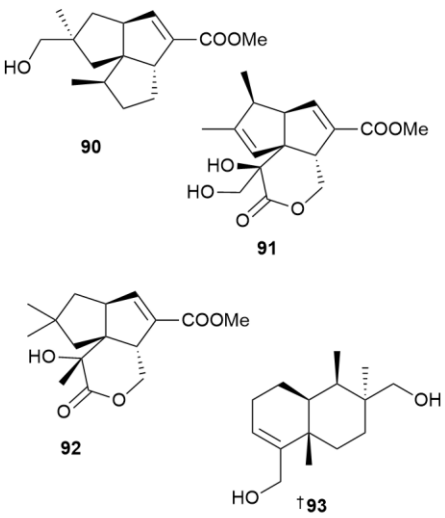
37 Actinobacteria *Streptomycetaceae* // (sponge) La Jolla, California, USA // Expanding the utility of bioinformatic data for the full stereostructural assignments of marinolides A and B, 24- and 26-membered macrolactones produced by a chemically exceptional marine-derived bacterium
79 // N // marinolide A // IA *vs* 2 HTCLs.
80 // N // marinolide B // IA *vs* 2 HTCLs.

38 Actinobacteria *Streptomyces* sp. // (sediment) Jeju Is., Republic of Korea // Discovery and biosynthesis of cihunamides, macrocyclic antibacterial RiPPs with a unique C−N linkage formed by CYP450 catalysis
81 // N // cihunamide A // IA *vs* 6 bact. strains.
82 // N // cihunamide B // IA to mod. activ. *vs* 6 bact. strains.
83 // N // cihunamide C // IA *vs* 6 bact. strains.
84 // N // cihunamide D // IA *vs* 6 bact. strains.







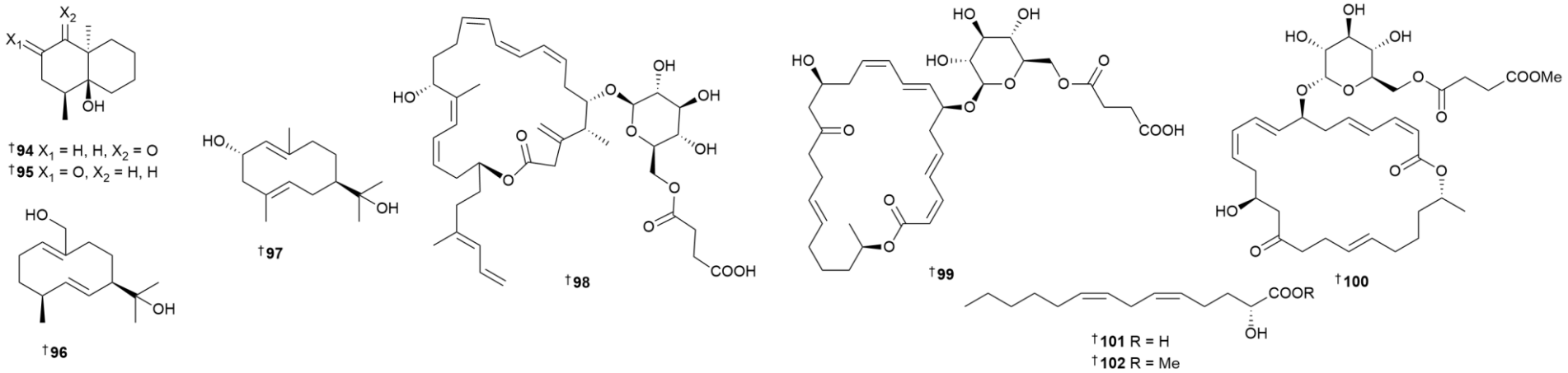


39 Actinobacteria *Streptomyces* sp. // (sponge) Florida Keys // Rapid unambiguous structure elucidation of streptnatamide A, a new cyclic peptide isolated from a marine-derived *Streptomyces* sp.
85 // N // streptnatamide A // NT.

40 Actinobacteria *Streptomyces* sp // (mangrove sediment) Maowei Sea Mangrove Reserve, Guangxi, China // Isolation, structure elucidation, and first total synthesis of quinomycins K and L, two new octadepsipeptides from the Maowei Sea mangrove-derived *Streptomyces* sp. B475
86 // N // quinomycin K // IA vs 37 bact. strains; IA *vs* 1 HTCL; total synth. achieved.
87 // N // quinomycin L // IA vs 37 bact. strains; IA *vs* 1 HTCL; total synth. achieved.

41 Actinobacteria *Streptomyces* sp. // (sediment) Xinghai Bay, China // NMR-Metabolomic profiling and genome mining drive the discovery of cyclic decapeptides from a marine *Streptomyces*
88 // N // lenziamide D1 // IA *vs* 4 HTCL.
89 // N // lenziamide B1 // IA to weak cytotox. *vs* 4 HTCLs.

42 Actinobacteria *Streptomyces qinglanensis* // (sediment) Dokdo Is., Republic of Korea // Sesquiterpenes from *Streptomyces qinglanensis* and their cytotoxic activity
90 // N // pentalenomycin A // IA *vs* 6 HTCLs.
91 // N // pentalenomycin B // weak cytotox. *vs* 6 HTCLs.
92 // N // pentalenomycin C // IA *vs* 6 HTCLs.
93 // N // bolinane A // IA *vs* 6 HTCLs.

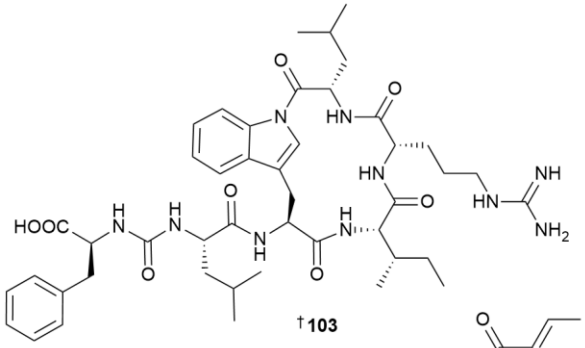


43 Actinobacteria *Streptomyces* sp. // (sponge, *Spongia* sp.) Xisha Is., China // Molecular networking-guided isolation of undescribed antifungal odoriferous sesquiterpenoids from a marinemesophotic zone sponge-associated *Streptomyces* sp. NBU3428
94 // N // odoripenoid A // IA *vs* 6 bact. strains; weak activ. *vs* 1 fungal strain; XRD.
95 // N // odoripenoid B // IA *vs* 6 bact. strains; weak activ. *vs* 1 fungal strain.
96 // N // odoripenoid C // IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
97 // N // odoripenoid D // IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.

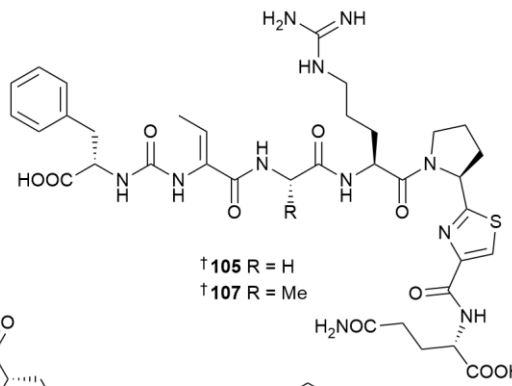
44 Firmicutes *Bacillus* sp. // (sediment) Anmyeon Is., Republic of Korea // Glycosylated and succinylated macrocyclic lactones with amyloid-β-aggregation-regulating activity from a marine *Bacillus* sp.
98 // N // succinyl glyco-oxydifficidin // weak amyloid-*β*-aggregation-regulating activ.
99 // N // succinyl macrolactin O // weak amyloid-*β*-aggregation-regulating activ.

45 Firmicutes *Bacillus* sp. // (cold-seep sediment) South China Sea // Glycosylated 24-membered lactones and unsaturated fatty acids from cold-seep-derived *Bacillus* sp. HDN 20-1259
100 // N // 6′-*O*-succinyl methyl ester macrolactin O // IA *vs* 7 bact. strains.
101 // N // (5*Z*,8*Z*)-2-hydroxytetradeca-5,8-dienoic acid // IA *vs* 7 bact. strains.
102 // N // methyl (5*Z*,8*Z*)-2-hydroxytetradeca-5,8-dienoate // IA *vs* 7 bact. strains.

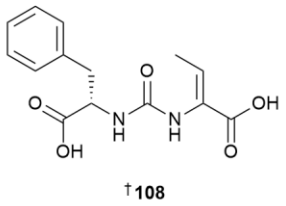
2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria



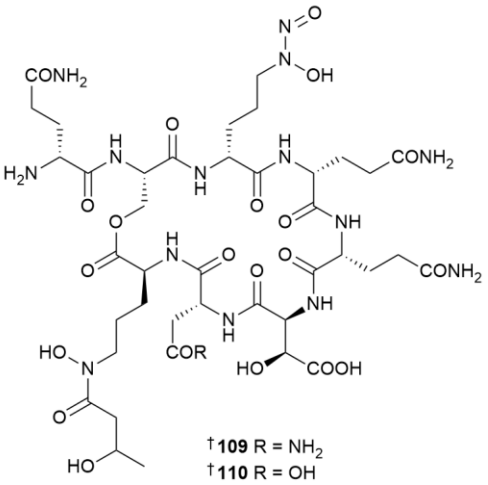
†**103**



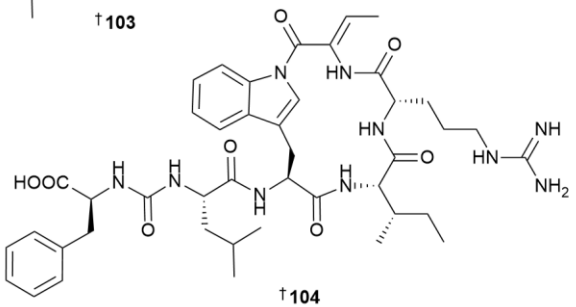
†**105** R = H
†**107** R = Me



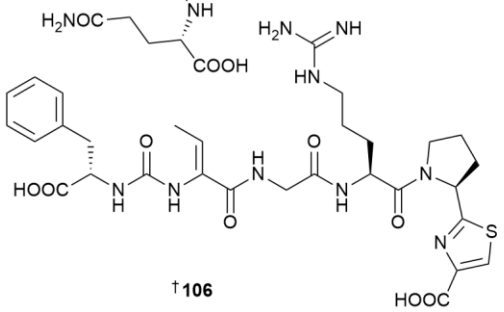
†**108**



†**109** R = NH_2
†**110** R = OH



†**104**



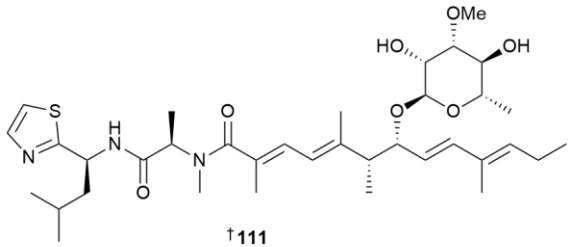
†**106**

46 Proteobacteria *Microbulbifer* sp. // (coral, *Goniopora* sp.), purchased from an aquarium vendor in Nagasaki, Japan // Bulbiferamide, an antitrypanosomal hexapeptide cyclized via an *N*-acylindole linkage from a marine obligate *Microbulbifer*
103 // N // bulbiferamide // weak activ. *vs T. cruzi*.

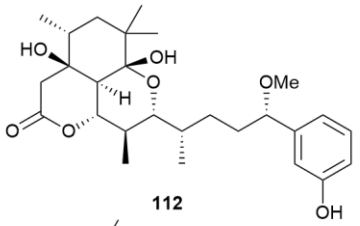
47 Proteobacteria *Microbulbifer* sp. // (sponge, *Aplysina fulva*) Summerland Key, Florida, USA // Discovery and biosynthesis of ureidopeptide natural products macrocyclized *via* indole *N*-acylation in marine *Microbulbifer* spp. bacteria
103 // N // bulbiferamide A // NT.
104 // N // (((2*S*)-1-(((12*Z*,3*Z*,6*S*,9*S*,12*S*)-9-((*S*)-sec-butyl)-3-ethylidene-6-(3-guanidinopropyl)-2,5,8,11-tetraoxo-11H-4,7,10-triaza-1(1,3)-indolacyclotridecaphane-12-yl)amino)-4-methyl-1-oxopentan-2-yl)carbamoyl)-L-phenylalanine // NT.

48 Proteobacteria *Microbulbifer* sp. // (sponge, *Smenospongia aurea*) Florida Keys, USA // Pseudobulbiferamides: plasmid-encoded ureidopeptide natural products with biosynthetic gene clusters shared among marine bacteria of different genera
105 // N // pseudobulbiferamide A // NT.
106 // N // pseudobulbiferamide B // NT.
107 // N // pseudobulbiferamide C // NT.
108 // N // (2*S*,6*Z*)-2-(3-(1-carboxy-2-phenylethyl)ureido)but-2-enoic acid // NT.

49 Proteobacteria *Tistrella mobilis* // Red Sea // Tistrellabactins A and B are photoreactive C-diazeniumdiolate siderophores from the marine-derived strain *Tistrella mobilis* KA081020-065
109 // N // tistrellabactin A // NT.
110 // N // tistrellabactin B // NT.

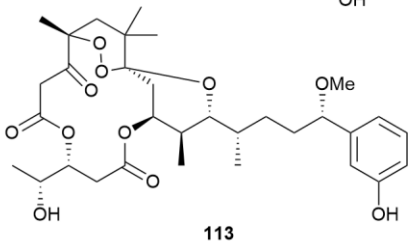


†111



112

115



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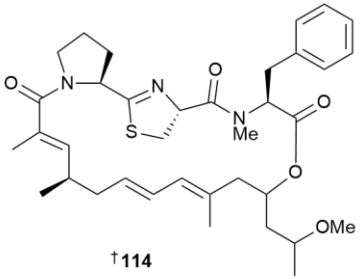
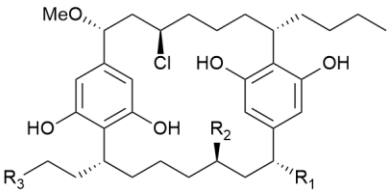


†114



†**116** R_1 = OMe, R_2 = H, R_3 = Et
†**117** R_1 = OH, R_2 = H, R_3 = Et
†**118** R_1 = H, R_2 = Cl, R_3 = Et
†**119** R_1 = OMe, R_2 = Cl, R_3 = H

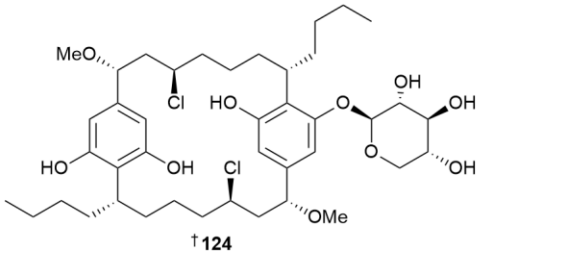
80 Cyanobacteria *Dichothrix* sp.and *Lyngbya* sp. // Loggerhead Key, Dry Tortugas, Florida // Isolation and biological activity of Iezoside and iezoside B, SERCA inhibitors from Floridian marine cyanobacteria
111 // N // iezoside B // weak activ. *vs* 2 HTCL, IA to pot. activ *vs* 2 NHCLs; mod. activ. *vs* SERCA inhib. in 2 HTCLs.

81 Cyanobacteria *Lyngbya* sp. // Lingshui Port, Sanya, China // Structure elucidation of two intriguing neo-debromoaplysiatoxin derivatives from marine cyanobacterium *Lyngbya* sp. showing strong inhibition of Kv1.5 potassium channel and differential cytotoxicity
112 // N // neo-debromoaplysiatoxin I // IA *vs* 5 HTCLs; IA vs Kv1.5 potassium voltage-gated channel.
113 // N // neo-debromoaplysiatoxin J // IA *vs* 5 HTCLs; IA vs Kv1.5 potassium voltage-gated channel.

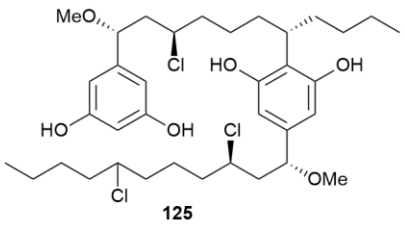
82 Cyanobacteria *Moorena* sp. // Kakeroma Is., Kagoshima prefecture, Japan // Alotamide B, a new cyclic depsipeptide isolated from assemblies of marine cyanobacteria, mainly consisting of *Moorena* sp.
114 // N // alotamide B // weak activ. *vs* 1 HTCL and 1 NMCL; IA *vs* neuronal stem cell differentiation.

83 Cyanobacteria *Lyngbya* sp. // Tanjong Hakim, St. John's Is., Singapore // Cyclopropane-containing specialized metabolites from the marine cyanobacterium cf. Lyngbya sp.
115 // N // benderadiene // IA *vs* quorum sensing in *P. aeruginosa*.

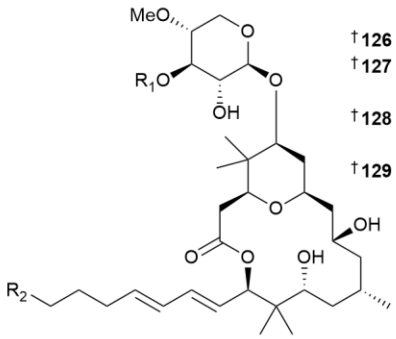
84 Cyanobacteria *Nostoc* sp. // Kvaløya Is., Norway // Four new suomilides isolated from the cyanobacterium *Nostoc* sp. KVJ20 and proposal of their biosynthetic origin
116 // N // suomilide B // IA *vs* 2 HTCLs and 1 NHCL.
117 // N // suomilide C // IA *vs* 2 HTCLs and 1 NHCL.
118 // N // suomilide D // IA *vs* 2 HTCLs and 1 NHCL.
119 // N // suomilide E // IA *vs* 2 HTCLs and 1 NHCL.



†**124**



125

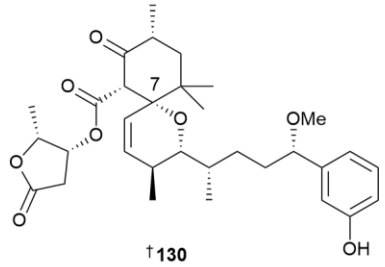


†**126** R_1 = Me, R_2 = –≡–

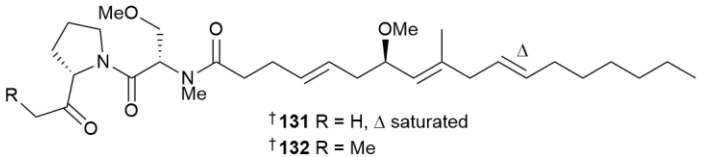
†**127** R_1 = Me, R_2 =

†**128** R_1 = H, R_2 =

†**129** R_1 = H, R_2 = Et

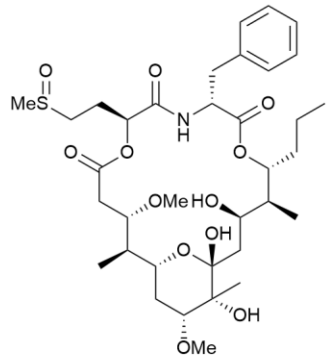


†**130**



†**131** R = H, Δ saturated

†**132** R = Me



†**133**

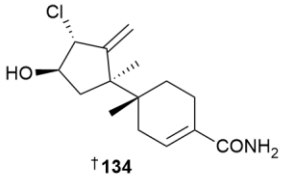
85 Cyanobacteria *Nostoc linckia* // * // New nostocyclophanes from *Nostoc linckia*
120 // N // nostocyclophane E // mod. cytotox. *vs* 1 HTCL.
121 // N // nostocyclophane F // mod. cytotox. *vs* 1 HTCL.
122 // N // nostocyclophane G // weak cytotox. *vs* 1 HTCL.
123 // N // nostocyclophane H // weak cytotox. *vs* 1 HTCL.
124 // N // nostocyclophane I // weak cytotox. *vs* 1 HTCL.
125 // N // nostocyclophane J // weak cytotox. *vs* 1 HTCL.

86 Cyanobacteria *Okeania* sp. // Akuna beach, Okinawa, Japan // Isolation and structure determination of akunolides, macrolide glycosides from a marine *Okeania* sp. cyanobacterium
126 // N // akunolide A // IA *vs T. b. rhodesiense*; IA *vs* 1 NHCL.
127 // N // akunolide B // IA *vs T. b. rhodesiense*; IA *vs* 1 NHCL.
128 // N // akunolide C // IA *vs T. b. rhodesiense*; IA *vs* 1 NHCL.
129 // N // akunolide D // IA *vs T. b. rhodesiense*; IA *vs* 1 NHCL.

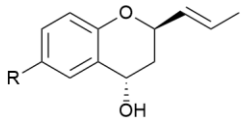
88 Cyanobacteria *Okeania hirsuta* // Kuba Beach, Nakagusuku, Okinawa, Japan // 7-epi-30-methyloscillatoxin D from an Okinawan cyanobacterium *Okeania hirsuta*
130 // R // 7-*epi*-30-methylocsillatoxin D // IA *vs* 1 murine NMCL.

95 Cyanobacteria *Okeania* sp. // Odo, Okinawa, Japan // Differentiation-promoting effects of okeaniamides A and B from an *Okeania* sp. marine cyanobacterium on preadipocytes
131 // N // okeaniamide A // IA *vs* murine fibroblast CL; weak activ. *vs* adipocyte differentiation in murine fibroblast CL.
132 // N // okeaniamide B // IA *vs* murine fibroblast CL; weak activ. *vs* adipocyte differentiation in murine fibroblast CL.

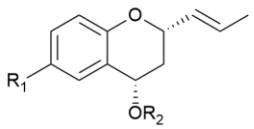
96 Cyanobacteria *Roseofilum reptotaenium* // South Water Cay and Curlew Cay, Belize // Cryptic diversity of black band disease cyanobacteria in *Siderastrea siderea* corals revealed by chemical ecology and comparative genome-resolved metagenomics
133 // N // looekeyolide D // NT.



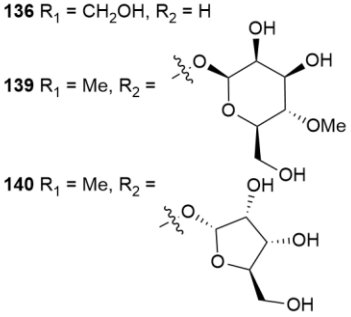
†**134**



†**135** R = Me
137 R = CH_2OH
138 R = COOH

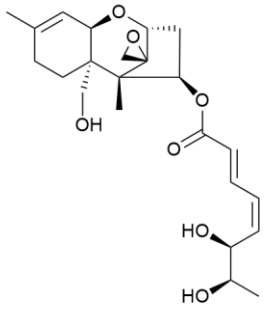


136 R_1 = CH_2OH, R_2 = H

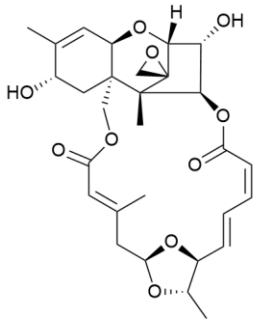


139 R_1 = Me, R_2 =

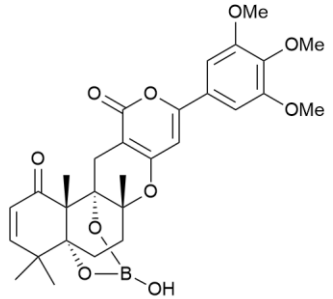
140 R_1 = Me, R_2 =



141



142

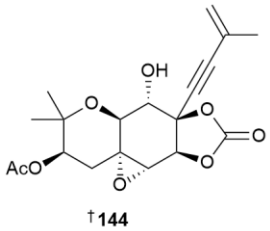


†**143**

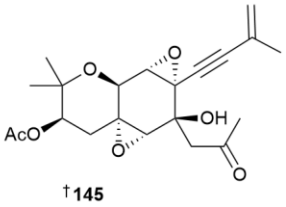
109 Ascomycota *Acremonium* sp // (sediment) Southern California, USA // Marinobazzanan, a bazzanane-type sesquiterpenoid, suppresses the cell motility and tumorigenesis in cancer cells
134 // N // marinobazzanan // no cytotox. *vs* 3 HTCLs; weak to mod. inhib. cell motility and tumorigenesis *vs* 3 HTCLs.

110 Ascomycota *Albifimbria verrucaria* // (mussel, *Mytilus edulis*) Changdao Is., Yantai, Shandong Province, China // Myrochromanol analogues and trichothecene derivatives from the shellfish-derived fungus *Albifimbria verrucaria*
135 // N // 2-*epi*-myrochromanol // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
136 // N // *ent*-myrochromanol B // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
137 // N // 4-*epi*-myrochromanol B // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
138 // N // 2-*epi*-myrochromanol A // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
139 // N // myrochromanoside A // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
140 // N // myrochromanoside B // IA to weak cytotox. *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
141 // N // 6′,7′-*erythro*-(2′*E*,4′*Z*)-trichoverrol B // IA *vs* 3 phytoplankton; IA *vs* 1 zooplankton.
142 // N // 3*R*,8*S*-dihydroxyroridin H // NT.

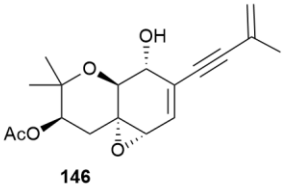
111 Ascomycota *Alternaria* sp // (soft coral, *Lobophytum crassum*) Dongsha Atoll, Pratas Is., China // A drimane meroterpenoid borate as a synchronous Ca+ oscillation inhibitor from the coral-associated fungus *Alternaria* sp. ZH-15
143 // N // territrem F // IA *vs* spontaneous synchronous Ca^{2+} oscillations (SCOs)



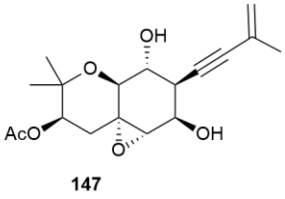
†144



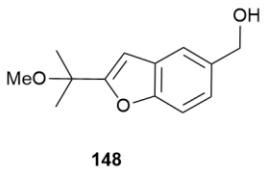
†145



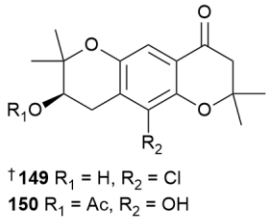
146



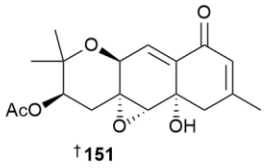
147



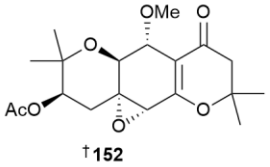
148



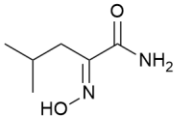
†149 R_1 = H, R_2 = Cl
150 R_1 = Ac, R_2 = OH



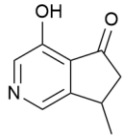
†151



†152



153

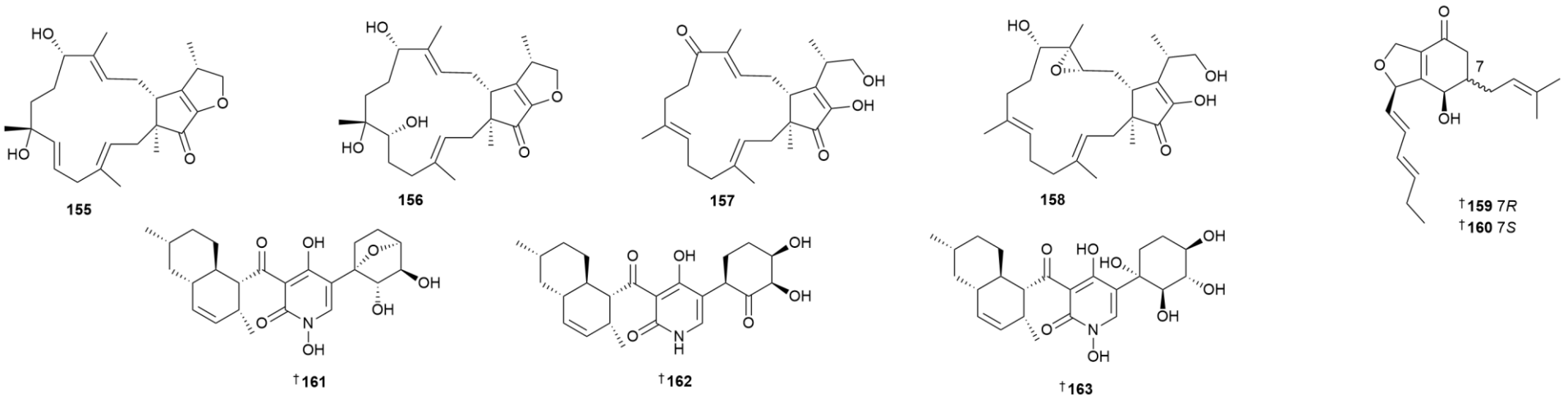


154

112 Ascomycota *Amphichorda felina* // (ascidian, *Styela plicata*) North Atoll, Xisha Is., China // Anti-inflammatory acetylenic meroterpenoids from the ascidian-derived fungus *Amphichorda felina* SYSU-MS7908
144 // N // felinoid A // IA *vs* anti-inflam.
145 // N // felinoid B // IA *vs* anti-inflam.
146 // N // felinoid C // IA *vs* anti-inflam.
147 // N // felinoid D // IA *vs* anti-inflam.
148 // N // felinoid E // IA *vs* anti-inflam.

113 Ascomycota *Amphichorda felina*, *Beauveria felina* // (ascidian, *Styela plicata*) Xisha Is., South China Sea // Shikimate-derived meroterpenoids from the ascidian-derived fungus *Amphichorda felina* SYSU-MS7908 and their anti-glioma activity
149 // N // amphicordin A // IA *vs* 3 HTCLs.
150 // N // amphicordin B // IA *vs* 3 HTCLs.
151 // N // amphicordin C // IA *vs* 3 HTCLs.
152 // N // amphicordin D // IA *vs* 3 HTCLs.

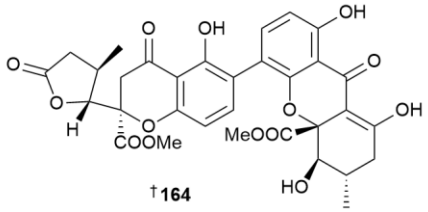
114 Ascomycota *Arthrinium* sp // (mangrove sediment) Fuli Mangrove Bay Wetland Park, Haikou, Hainan Province, China // New neuraminidase inhibitory alkaloids from the mangrove soil-derived fungus *Arthrinium* sp. SCSIO 41305
153 // M // (*E*)-2-(hydroxyimino)-4-methylpentanamide // IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* AChE; IA *vs* α-glucosidase; IA *vs* PI3K; IA *vs* NA.
154 // N // 4-hydroxy-7-methyl-6,7-dihydro-5*H*-cyclopenta[*c*]pyridin-5-one // IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* AChE; IA *vs* α-glucosidase; IA *vs* PI3K; IA *vs* NA.



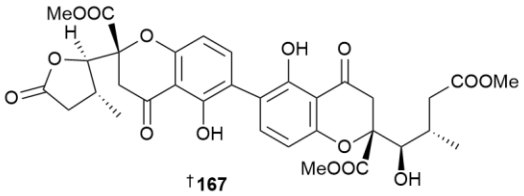
115 Ascomycota *Arthrinium* sp // (mangrove sediment) Sanya, China // Arthproliferins A–D, four new sesterterpenes from the mangrove-sediment-derived fungus *Arthrinium* sp. SCSIO41221
155 // N // arthproliferin A // IA *vs* 5 HTCLs.
156 // N // arthproliferin B // IA *vs* 5 HTCLs.
157 // N // arthproliferin C // IA *vs* 5 HTCLs.
158 // N // arthproliferin D // IA *vs* 5 HTCLs.

116 Ascomycota *Arthrinium* sp // (mangrove sediment) Fuli Mangrove Bay Wetland Park, Haikou, Hainan Province, China // New meroterpenoids and anti-osteoclastogenic polyketides from the mangrove-derived fungus *Arthrinium* sp. SCSIO 41306
159 // N // arthrinone A // IA *vs* RANKL.
160 // N // arthrinone B // IA vs RANKL.

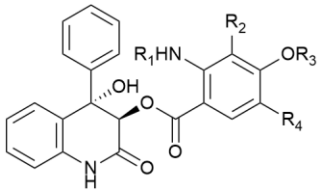
117 Ascomycota *Arthrinium arundinis* // (sponge, *Phakellia fusca*) Xisha Is., China // Cytotoxic pyridine alkaloids from a marine-derived fungus *Arthrinium arundinis* exhibiting apoptosis-inducing activities against small cell lung cancer
161 // N // arthpyrone M // weak to mod. cytotox. *vs* 5 HTCLs.
162 // N // arthpyrone N // IA to weak cytotox. *vs* 5 HTCLs.
163 // N // arthpyrone O // IA to mod. cytotox. *vs* 5 HTCLs.



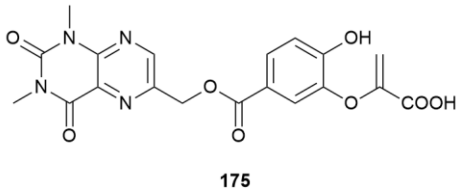
†164



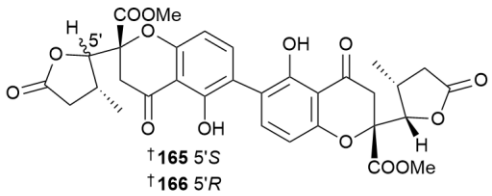
†167



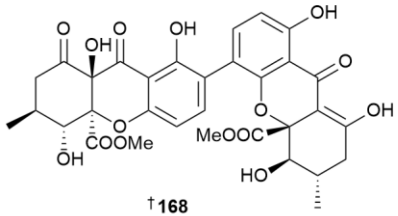
†169 $R_1 = R_2 = R_4 = H$, $R_3 = CH_2CH=C(CH_3)_2$
170 $R_1 = CH_2CH=C(CH_3)_2$, $R_2 = R_3 = R_4 = H$
171 $R_1 = CH_2CH=C(CH_3)_2$, $R_2 = R_3 = H$, $R_4 = Cl$
172 $R_1 = R_2 = H$, $R_3 = CH_2CH=C(CH_3)_2$, $R_4 = Cl$
173 $R_1 = CH_2CH_2COCH_3$, $R_2 = H$, $R_3 = CH_2CH=C(CH_3)_2$, $R_4 = Cl$
174 $R_1 = R_3 = H$, $R_2 = R_4 = Cl$



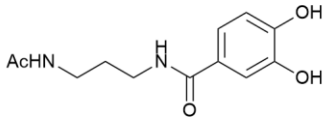
175



†165 5'*S*
†166 5'*R*



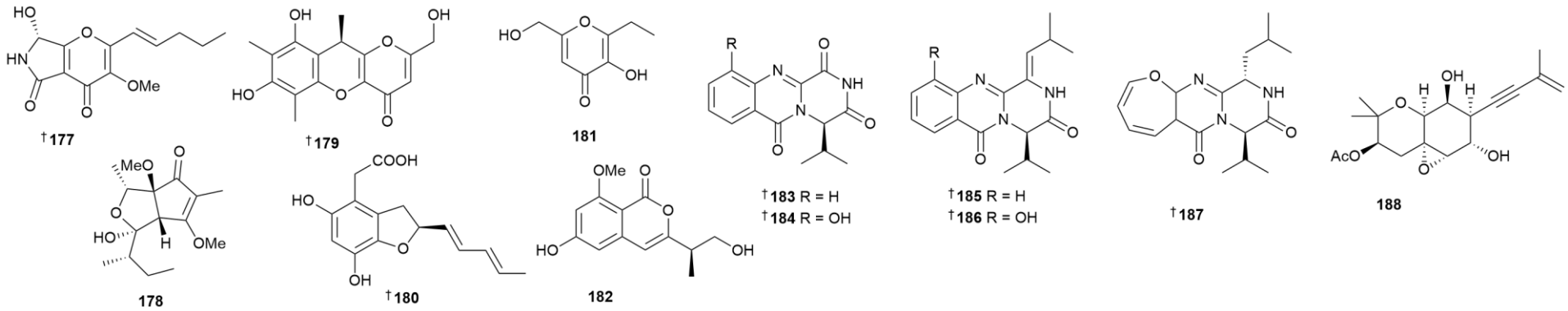
†168



176

119 Ascomycota *Aspergillus aculeatinus* // (unspecified source) unspecified location // Aculeaxanthones A–E, new xanthones from the marine-derived fungus *Aspergillus aculeatinus* WHUF0198
164 // N // aculeaxanthone A // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains.
165 // N // aculeaxanthone B // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains.
166 // N // aculeaxanthone C // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains.
167 // N // aculeaxanthone D // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains.
168 // N // aculeaxanthone E // IA *vs* 3 HTCLs; IA *vs* 9 bact. strains.

120 Ascomycota *Aspergillus alabamensis* // (seagrass, *Enhalus acoroides*) Dongzhai Port, Hainan Island, China // Discovery of novel bactericides from *Aspergillus alabamensis* and their antibacterial activity against fish pathogens
169 // N // asperalin A // IA to weak activ. *vs* 5 bact. strains.
170 // N // asperalin B // IA to weak activ. *vs* 5 bact. strains.
171 // N // asperalin C // IA to mod. activ. *vs* 5 bact. strains.
172 // N // asperalin D // IA to mod. activ. *vs* 5 bact. strains.
173 // N // asperalin E // IA to mod. activ. *vs* 5 bact. strains.
174 // N // asperalin F // IA to weak activ. *vs* 5 bact. strains.
175 // N // asperalumazine A // IA *vs* 5 bact. strains.
176 // N // *N*-(3-acetamidopropyl)-3, 4-dihydroxybenzamide // IA *vs* 5 bact. strains.

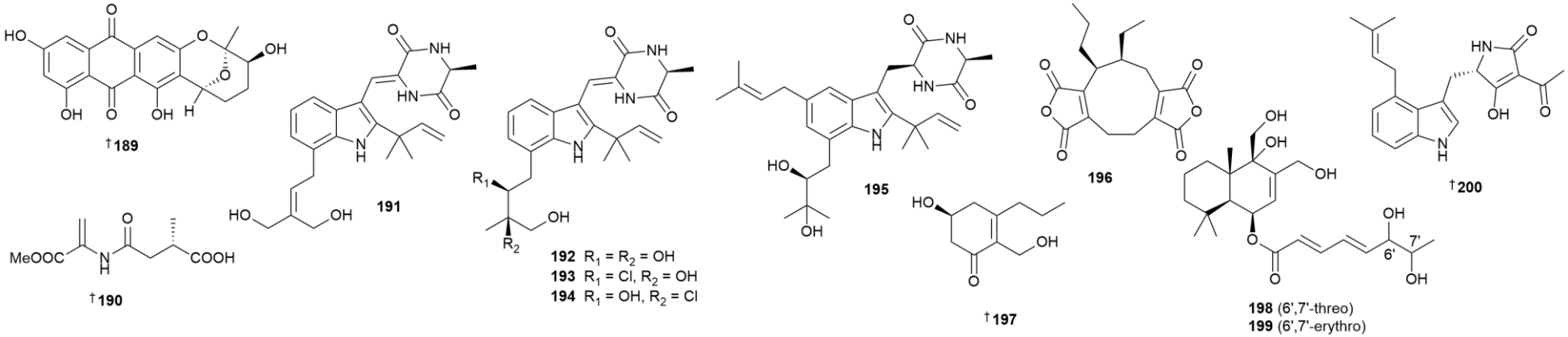


121 Ascomycota *Aspergillus aculeatus* // (sediment) South China // Metabolomic strategy to characterize the profile of secondary metabolites in *Aspergillus aculeatus* DL1011 regulated by chemical epigenetic agents
177 // N // pyranonigrin G // IA *vs* antioxid.; IA *vs* 5 PTPs; IA *vs* 4 HTCLs.

122 Ascomycota *Aspergillus austwickii* // (unspecified soft coral) Beihai, Guangxi Province, China // Secondary metabolites from the coral-derived fungus *Aspergillus austwickii* SCSIO41227 with pancreatic lipase and neuraminidase inhibitory activities
178 // N // asperpentenone B // IA *vs* PL; IA *vs* AChE, IA *vs* NA.
179 // N // asperpentenone C // IA *vs* PL; IA *vs* AChE, IA *vs* NA.
180 // N // asperpentenone D // IA *vs* PL; IA *vs* AChE, weak inhib. *vs* NA.
181 // N // asperpentenone E // IA *vs* PL; IA *vs* AChE, IA *vs* NA.

123 Ascomycota *Aspergillus carbonarius* // (sponge, *Aaptos suberitoides*) Taman Nasional Kepulauan Seribu, Indonesia // Chemical constituents of *Aspergillus carbonarius* isolated from marine sponge *Aaptos suberitoides*
182 // N // (*R*)-6-hydroxy-3-(1-hydroxypropan-2-yl)-8-methoxyisocoumarin // IA *vs* 5 bact. strains.

124 Ascomycota *Aspergillus carneus* // (brown alga, *Laminaria sachalinensis*) Kunashir Is. and Van Phong Bay, the South China Sea, Vietnam // New anti-hypoxic metabolites from co-culture of marine-derived fungi *Aspergillus carneus* KMM 4638 and *Amphichorda* sp. KMM 4639
183 // N // felicarnezoline A // IA *vs* 3 HTCLs; IA *vs* 1 NMCL; IA *vs* antioxid.
184 // N // felicarnezoline B // IA *vs* 3 HTCLs; IA *vs* 1 NMCL; weak *vs* antioxid.
185 // N // felicarnezoline C // IA *vs* 3 HTCLs; IA *vs* 1 NMCL; IA *vs* antioxid.
186 // N // felicarnezoline D // IA *vs* 3 HTCLs; IA *vs* 1 NMCL; IA *vs* antioxid.
187 // N // felicarnezoline E // IA *vs* 3 HTCLs; IA *vs* 1 NMCL; IA *vs* antioxid.
188 // N // oxirapentyn M // NT.



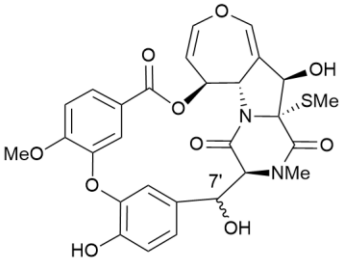
125 Ascomycota *Aspergillus carneus* // (coral, *Anthogorgia* sp.) Weizhou Is. coral reef, Guangxi Zhuang autonomous region, China // Secondary metabolites from marine-derived fungus *Aspergillus carneus* GXIMD00519
189 // N // carneusin A // IA to weak activ. *vs* 5 bact. strains; IA to weak cytotox. *vs* 5 HTCLs.
190 // N // carneusin B // IA *vs* 5 bact. strains; IA *vs* 5 HTCLs.

126 Ascomycota A*spergillus chevalieri* // (sediment) northeast South China Sea // Antibacterial indole diketopiperazine alkaloids from the deep-sea cold seep-derived fungus *Aspergillus chevalieri*
191 // N // 24,25-dihydroxyvariecolorin G // IA to mod. activ. *vs* 5 bact. strains.
192 // N // 25-hydroxyrubrumazine B // weak activ. *vs* 5 bact. strains.
193 // N // 22-chloro-25-hydroxyrubrumazine B // IA to mod. activ. *vs* 5 bact. strains.
194 // N // 25-hydroxyvariecolorin F // IA to weak activ. *vs* 5 bact. strains.
195 // N // 27-*epi*-aspechinulin D // weak activ. *vs* 5 bact. strains.

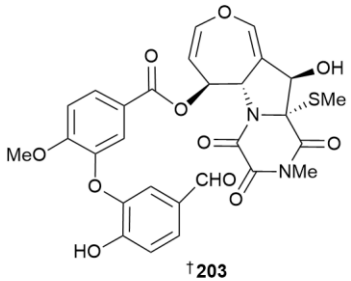
127 Ascomycota *Aspergillus chevalieri* // (ascidian, *Phallusia nigra*) Phuket Province, Thailand // A nonadride derivative from the marine-derived fungus *Aspergillus chevalieri* PSU-AMF79
196 // N // *ent*-epiheveadride // IA *vs* 6 bact. strains; IA *vs* 5 fungal strains.

128 Ascomycota *Aspergillus insuetus* // (unspecified seagrass) Zhuhai, Guangdong Province, China // Cyclohexenone derivative and drimane sesquiterpenes from the seagrass-derived fungus *Aspergillus insuetus*
197 // N // insuetone A // IA *vs* 1 HTCL; IA *vs* 4 fungal strains; NT *vs* NO prod.
198 // N // ustusolate H // IA *vs* 1 HTCL; IA *vs* 4 fungal strains; IA *vs* NO prod.
199 // N // ustusolate I // IA *vs* 1 HTCL; IA *vs* 4 fungal strains; IA *vs* NO prod.

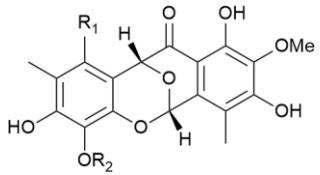
129 Ascomycota *Aspergillus flavus* // (sediment) Eastern Pacific Ocean // β-cyclopiazonic acid binds iron demonstrating siderophore-like activity and promotes growth in *Pseudomonas aeruginosa*
200 // N // β-cyclopiazonic acid // IA *vs* Fe^{3+} binding (siderophore activity).



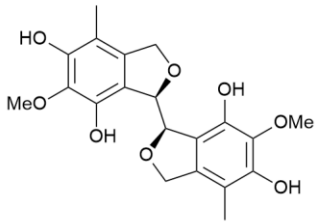
†**201** 7′*R*
†**202** 7′*S*



†**203**



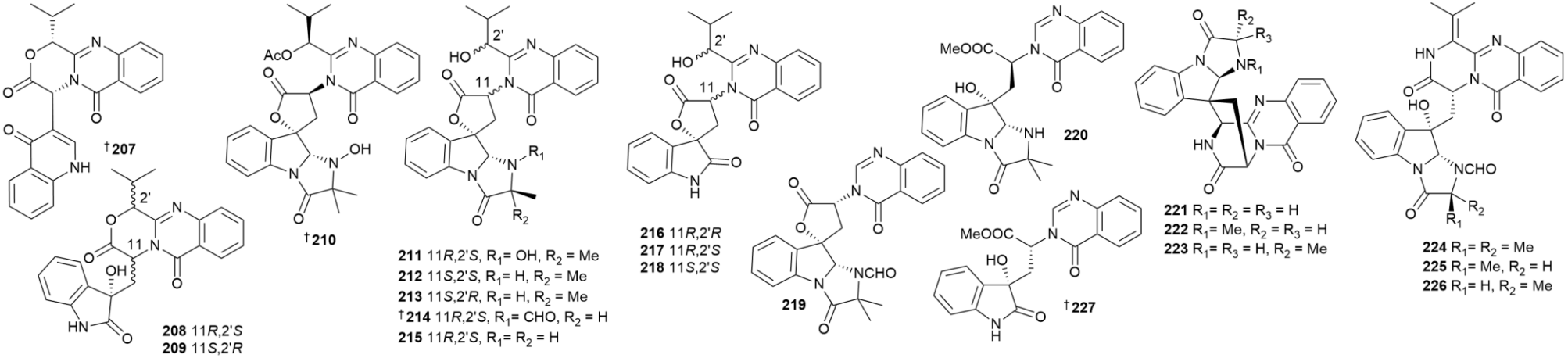
†**204** R_1 = CHO, R_2 = H
†**205** R_1 = CH_2OH, R_2 = Me



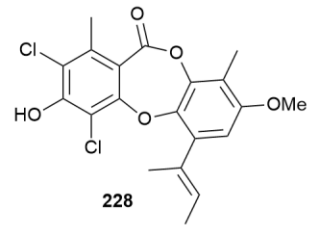
†**206**

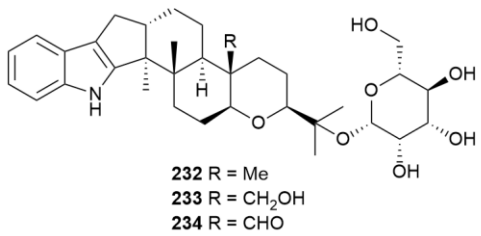
130 Ascomycota *Aspergillus nidulans* // (sediment) South China Sea // Emestrin-type thiodiketopiperazines from *Aspergillus nidulans* SD-531, a fungus obtained from the deep-sea sediment of cold seep in the South China Sea
201 // N // didethio-11a-methylthioemestrin // IA *vs* 1 HTCL; IA *vs* 11 bact. strain; IA to weak inhib. *vs* 8 fungal strains.
202 // N // 7′-*epi*-didethio-11a-methylthioemestrin // weak cytotox. *vs* 1 HTCL; IA *vs* 11 bact. strain; IA *vs* 8 fungal strains.
203 // N // 2″-desmethyl-MPC1001F // weak cytotox. *vs* 1 HTCL; IA to pot. *vs* 11 bact. strain; IA *vs* 8 fungal strains.

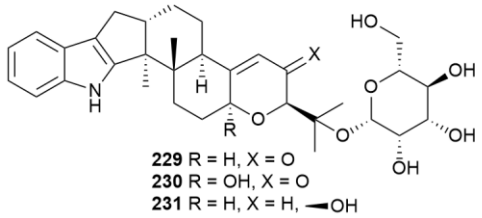
131 Ascomycota *Aspergillus insulicola* // (sediment) South China Sea // Potential α-glucosidase inhibitors from the deep-sea sediment-derived fungus *Aspergillus insulicol*
204 // N // epicocconigrone C // IA *vs* α-glucosidase.
205 // N // epicocconigrone D // IA *vs* α-glucosidase.
206 // N // flavimycin C // IA *vs* α-glucosidase.

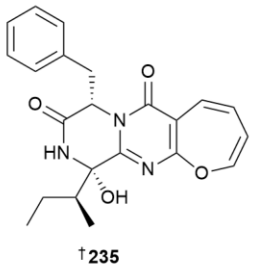


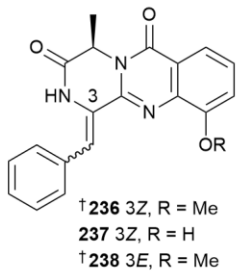
132 Ascomycota *Aspergillus clavulus* // (unspecified sponge) Liuzhou Is., China // Indoloquinazoline alkaloids suppress angiogenesis and inhibit metastasis of melanoma cells
207 // N // clavutoine A // IA *vs* 1 NHCL.
208 // N // clavutoine B // NT.
209 // N // clavutoine C // NT.
210 // N // clavutoine D // NT.
211 // N // clavutoine E // NT.
212 // N // clavutoine F // IA *vs* 1 NHCL.
213 // N // clavutoine G // IA *vs* 1 NHCL.
214 // N // clavutoine H // IA *vs* 1 NHCL.
215 // N // clavutoine I // IA *vs* 1 NHCL.
216 // N // clavutoine J // NT.
217 // N // clavutoine K // IA *vs* 1 NHCL.
218 // N // clavutoine L // NT.
219 // N // clavutoine M // NT.
220 // N // clavutoine N // IA *vs* 1 NHCL.
221 // N // clavutoine O // IA *vs* 1 NHCL.
222 // N // clavutoine P // IA *vs* 1 NHCL.
223 // N // clavutoine Q // IA *vs* 1 NHCL.
224 // N // clavutoine R // IA *vs* 1 NHCL.
225 // N // clavutoine S // IA *vs* 1 NHCL.
226 // N // clavutoine T // IA *vs* 1 NHCL.
227 // N // clavutoine U // IA *vs* 1 NHCL.

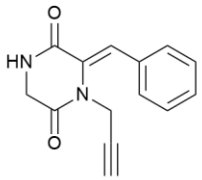


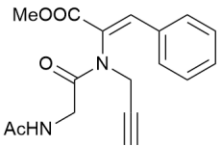


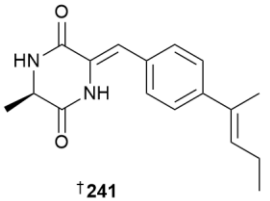










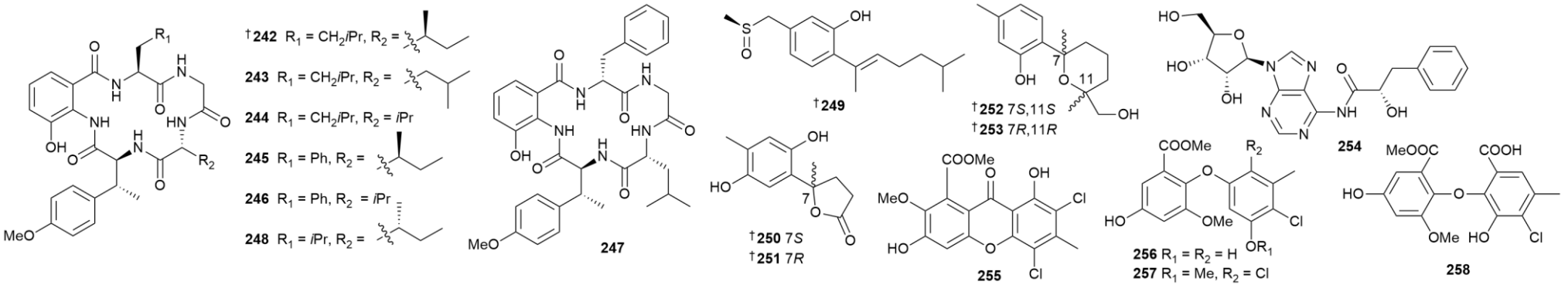


133 Ascomycota *Aspergillus nidulans* // (sponge, *Echinodictyum conulosum*) Bai Tu Long sea area, Quang Ninh province, Vietnam // Antimicrobial activity of depsidones and macrocyclic peptides isolated from marine sponge-derived fungus *Aspergillus nidulans* M256
228 // N // 7-dechloronidulin // IA to mod. activ. *vs* 6 bact. strains; mod. activ. *vs* 1 fungal strain.

134 Ascomycota *Aspergillus noonimiae* // (sediment) Perth, Western Australia // Noonindoles G–L: indole diterpene glycosides from the Australian marine-derived fungus *Aspergillus noonimiae* CMB-M0339
229 // N // noonindole G // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.
230 // N // noonindole H // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.
231 // N // noonindole I // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.
232 // N // noonindole J // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.
233 // N // noonindole K // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.
234 // N // noonindole L // IA *vs* 2 HTCLs; IA *vs* 3 bact. strains; IA *vs* 1 fungal strain.

135 Ascomycota *Aspergillus puniceus* // (unspecified coral) South China Sea // Four previously undescribed diketopiperazines from marine fungus *Aspergillus puniceus* FAHY0085 and their effects on liver X receptor α
235 // N // oxepinamide L // IA *vs* transcriptional activation LXRα.
236 // N // puniceloid E // NT.
237 // N // puniceloid F // weak inhib. transcriptional activation LXRα.
238 // N // puniceloid G // NT.

136 Ascomycota *Aspergillus sclerotiorum* // (unidentified sponge) Guangdong, China // Sclerotioloids A–C: three new alkaloids from the marine-derived fungus *Aspergillus sclerotiorum* ST0501
239 // N // sclerotioloid A // IA *vs* 20 HTCLs, IA *vs* 20 bact. strains, IA *vs* 2 fungal strains; IA *vs* antioxid.; IA *vs* anti-inflam.
240 // N // sclerotioloid B // IA *vs* 20 HTCLs, IA *vs* 20 bact. strains, IA *vs* 2 fungal strains; IA *vs* antioxid.; IA *vs* anti-inflam.
241 // N // sclerotioloid C // IA *vs* 20 HTCLs, IA *vs* 20 bact. strains, IA *vs* 2 fungal strains; IA *vs* antioxid.; IA *vs* anti-inflam.



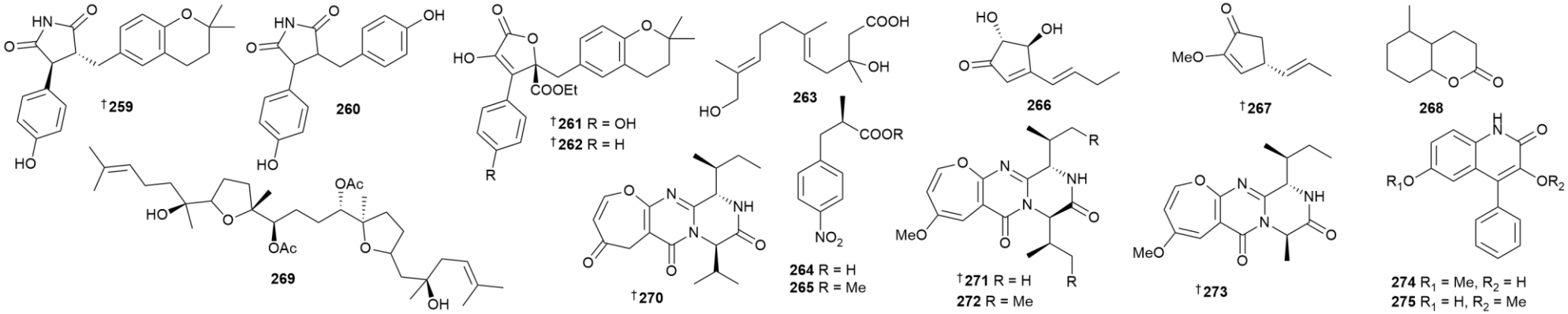
137 Ascomycota *Aspergillus pseudoviridinutans* // (sediment) Kueishantao, Taiwan // Molecular networking-guided isolation of cyclopentapeptides from the hydrothermal vent sediment derived fungus *Aspergillus pseudoviridinutans* TW58-5 and their anti-inflammatory effects
242 // N // pseudoviridinutan A // IA *vs* NO prod.
243 // N // pseudoviridinutan B // IA *vs* NO prod.
244 // N // pseudoviridinutan C // IA *vs* NO prod.
245 // N // pseudoviridinutan D // IA *vs* NO prod.
246 // N // pseudoviridinutan E // IA *vs* NO prod.
247 // N // pseudoviridinutan F // IA *vs* NO prod.
248 // N // pseudoviridinutan G // IA *vs* NO prod.

138 Ascomycota *Aspergillus sydowii* // (sediment) Southwest Indian Ridge // Sulfoxide-containing bisabolane sesquiterpenoids with antimicrobial and nematicidal activities from the marine-derived fungus *Aspergillus sydowii* LW09
249 // N // aspersydosulfoxide A // IA *vs* 2 bact. strains; IA *vs* inhib. spore germination in 2 fungal strains; IA *vs* 1 nematode.

139 Ascomycota *Aspergillus sydowii* // (sediment) Marine Culture Collection China // Two pairs of new bisabolane-type sesquiterpenoids from *Aspergillus sydowii*
250 // N // (+)-aspersydowin A // IA *vs* immunosuppressive activ.
251 // N // (−)-aspersydowin A // IA *vs* immunosuppressive activ.
252 // N // (+)-aspersydowin B // IA *vs* immunosuppressive activ.
253 // N // (−)-aspersydowin B // IA *vs* immunosuppressive activ.

140 Ascomycota *Aspergillus sydowii*, *Emericella sydowii* // (amphipod, *Eurythenes gryllus*) North Atlantic Ocean // Discovery and structural assignment of (S)-sydosine from amphipod-derived *Aspergillus sydowii* MBC15-11F through HRMS, advanced Mosher, and molecular modelling analyses
254 // N // (*S*)-sydosine // IA *vs* 3 bact. strains.

141 Ascomycota *Aspergillus terreus* // (sponge, *Dysidea* sp.) South China Sea // Aspergetherins A-D, new chlorinated biphenyls with anti-MRSA activity from the marine sponge symbiotic fungus *Aspergillus terreus* 164018
255 // N // aspergetherin A // IA *vs* 2 bact. strains.
256 // N // aspergetherin B // IA *vs* 2 bact. strains.
257 // N // aspergetherin C // IA *vs* 2 bact. strains.
258 // N // aspergetherin D // IA *vs* 2 bact. strains.

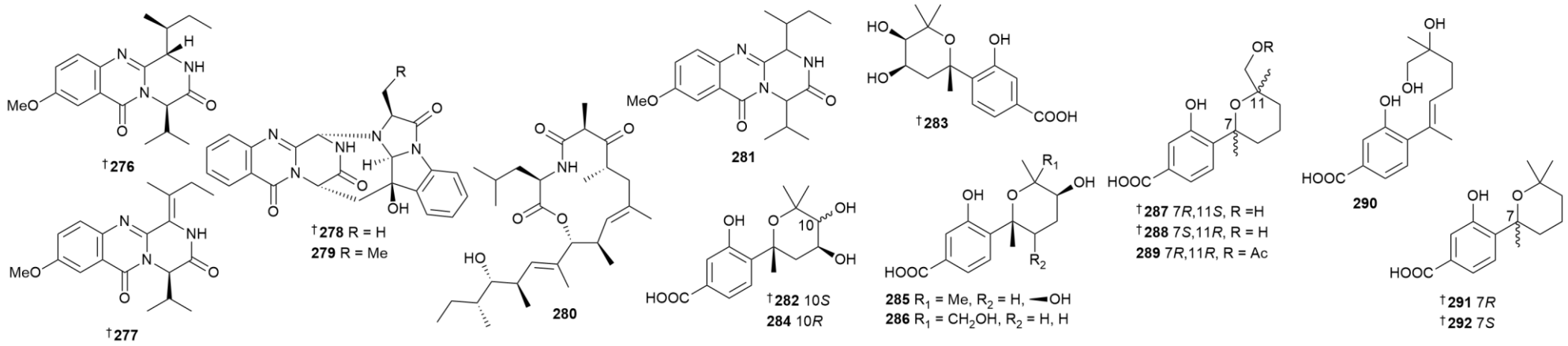


142 Ascomycota *Aspergillus terreus* // (unspecified soft coral) South China Sea // Bioactive aspergteroids G–J from soft-coral-associated symbiotic and epiphytic fungus *Aspergillus terreus* EGF7-0-1
259 // N // aspergteroid G // IA *vs* 1 NMCL; weak *vs* anti-inflam.
260 // N // aspergteroid H // IA *vs* 1 NMCL; IA *vs* anti-inflam.
261 // N // aspergteroid I // IA *vs* 1 NMCL; IA *vs* anti-inflam.
262 // N // aspergteroid J // IA *vs* 1 NMCL; IA *vs* anti-inflam.

143 Ascomycota *Aspergillus terreus* // (sediment) Hangzhou Bay, China // A new sesquiterpene and two nitro-containing phenylpropionic acid derivatives from the fungus *Aspergillus terreus* LPFH-1
263 // N // deacetylated aspterric A // IA *vs* 1 HTCL.
264 // N // (*R*)-2-(4-nitrobenzyl)propanoic acid // IA *vs* 1 HTCL.
265 // N // methyl α-methyl-4-nitrobenzenepropanoate // IA *vs* 1 HTCL.

144 Ascomycota *Aspergillus terreus* // (fish, *Johnius belangerii*) Hainan province, China // Secondary metabolites from *Aspergillus terreus* F6-3, a marine fungus associated with *Johnius belengerii*
266 // N // asperterreinone A // IA *vs* inhib. ß-glucuronidase.
267 // N // asperterreinone B // IA *vs* inhib. ß-glucuronidase.
268 // N // (±)-asperterreinin A // IA *vs* inhib. ß-glucuronidase.
269 // M // eurylene // IA *vs* inhib. ß-glucuronidase.

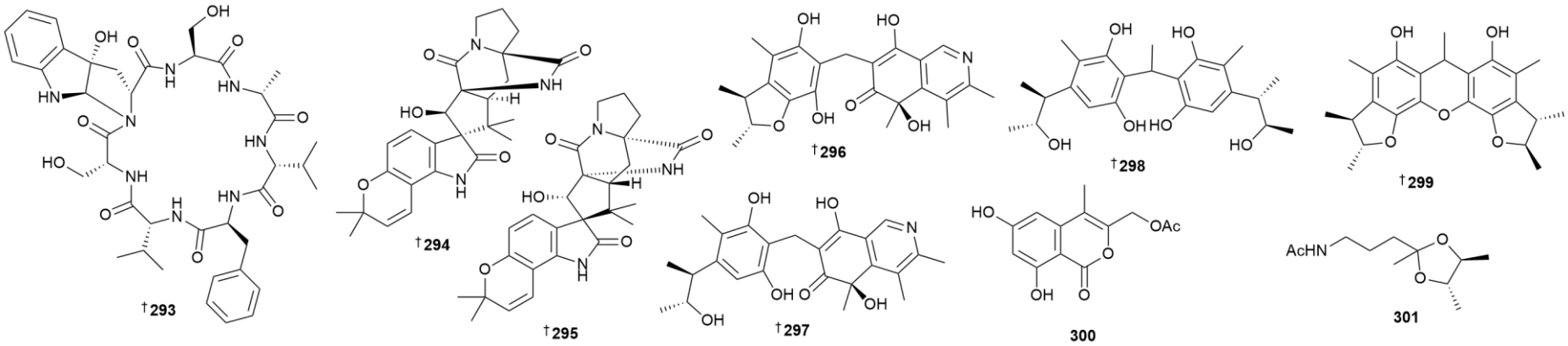
145 Ascomycota *Aspergillus versicolor* // (coral, *Hemicorallium* cf. *imperiale*) Magellan Seamounts // Oxepine-containing pyrazinopyrimidine alkaloids and quinolinone derivatives produced by *Aspergillus versicolor* AS-212, a deep-sea-derived endozoic fungus
270 // N // versicoxepine A // IA *vs* 9 bact. strains; IA to weak activ. *vs* 6 fungal strains.
271 // N // versicoxepine B // IA *vs* 9 bact. strains; IA *vs* 6 fungal strains.
272 // N // versicoxepine C // IA *vs* 9 bact. strains; IA *vs* 6 fungal strains.
273 // N // versicoxepine D // IA *vs* 9 bact. strains; IA *vs* 6 fungal strains.
274 // M // 3-hydroxy-6-methoxy-4-phenylquinolin-2(1*H*)-one // IA to mod. activ. *vs* 9 bact. strains; IA to weak activ. *vs* 6 fungal strains.
275 // M // 3-methoxy-6-hydroxy-4-phenylquinolin-2(1*H*)-one // IA to weak activ. *vs* 9 bact. strains; IA *vs* 6 fungal strains.



146 Ascomycota *Aspergillus versicolor, Emericella versicolor* // (coral, *Hemicorallium* cf. *imperiale*) Magellan Seamounts, Western Pacific Ocean // Diketopiperazine alkaloids and bisabolene sesquiterpenoids from *Aspergillus versicolor* AS-212, an endozoic fungus associated with deep-sea coral of Magellan Seamounts
276 // R // (−)-isoversicomide A // IA *vs* 8 bact. strains.
277 // N // versicomide E // IA *vs* 8 bact. strains.
278 // R // cottoquinazoline A // IA to weak activ. *vs* 8 bact. strains.
279 // N // cottoquinazoline H // IA to mod. activ. *vs* 8 bact. strains.

147 Ascomycota *Aspergillus versicolor* // (sediment) Farm Strait, Arctic Ocean // Bioactivity and metabolome mining of deep-sea sediment-derived microorganisms reveal new hybrid PKS-NRPS macrolactone from *Aspergillus versicolor* PS108-62
280 // N // versicolide A // NT.
281 // N // (−)-isoversicomide A // NT.

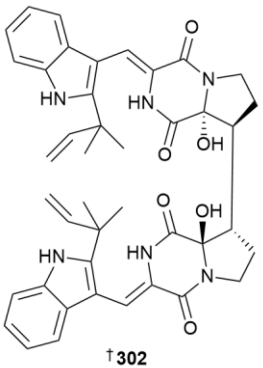
148 Ascomycota *Aspergillus versicolor* // (sediment) Yap Trench, West Pacific Ocean // Structure revisions of phenolic bisabolane sesquiterpenes and a ferroptosis inhibitor from the marine-derived fungus *Aspergillus versicolor* YPH93
282 // N // (7*R*,9*S*,10*S*)-9,10-dihydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
283 // N // (7*S*,9*R*,10*R*)-9,10-dihydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
284 // N // (7*R**,9*S**,10*R**)-9,10-dihydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
285 // N // (7*S**,8*R**,10*S**)-8,10-dihydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
286 // N // * // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
287 // N // (7*R**,11*S**)-12-hydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
288 // N // (7*S*,11*R*)-12-hydroxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
289 // N // (7*R**,11*R**)-12-acetoxysydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
290 // N // 12-hydroxyengyodontiumone I // IA *vs* 2 HTCLs; IA *vs* antioxid.; weak inhib. ferroptosis.
291 // R // *R*-sydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.
292 // R // *S*-sydowic acid // IA *vs* 2 HTCLs; IA *vs* antioxid.; IA *vs* inhib. ferroptosis.

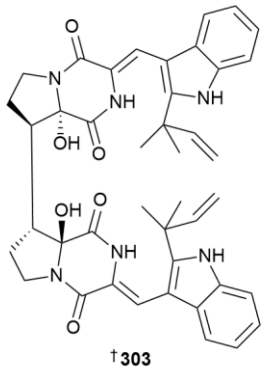


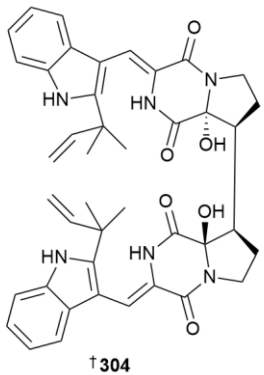
149 Ascomycota *Aspergillus versicolor* // (unspecified soft coral) unspecified location // Targeted isolation of antitubercular cycloheptapeptides and an unusual pyrroloindoline-containing new analog, asperpyrroindotide A, using LC–MS/MS-based molecular networking
293 // N // asperpyrroindotide A // IA vs *vs M. tuberculosis*.

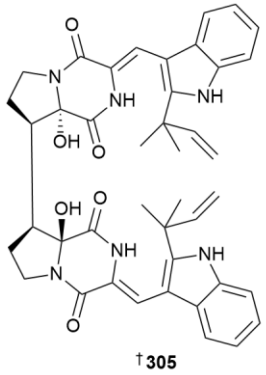
150 Ascomycota *Aspergillus versicolor* // (unspecified soft coral) South China Sea // New indole diketopiperazine alkaloids from soft coral-associated epiphytic fungus *Aspergillus versicolor* CGF 9-1-2
294 // N // (+)-19-*epi*-sclerotiamide // NT.
295 // N // (−)-19-*epi*-sclerotiamide // NT.

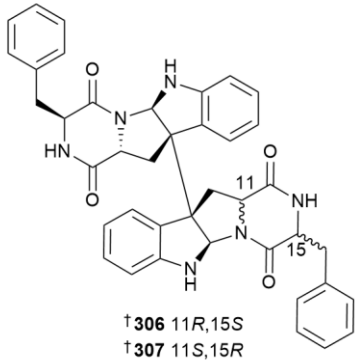
151 Ascomycota *Aspergillus versicolor* // (whale, *Mesoplodon densirostris*) Ningde, East China Sea // Citriquinolinones A and B: rare isoquinolinone-embedded citrinin analogues and related metabolites from the deep-sea-derived *Aspergillus versicolor* 170217
296 // N // citriquinolione A // IA *vs* anti-allergy (food); IA *vs* 2 bact. strains.
297 // N // citriquinolione B // IA *vs* anti-allergy (food); IA *vs* 2 bact. strains.
298 // N // dicitrinone K // IA *vs* anti-allergy (food); IA *vs* 2 bact. strains.
299 // N // dicitrinone L // IA *vs* anti-allergy (food); IA *vs* 2 bact. strains.
300 // N // (6,8-dihydroxy-4-methyl-1-oxo-1*H*-isochromen-3-yl) methyl acetate // IA *vs* anti-allergy (food), IA *vs* 2 bact. strains.
301 // N // *N*-(3-((2′*S*,3′*S*)-2′,3′,5′-trimethyl-1,3-dioxolan-2-yl)propyl)acetamide // IA *vs* anti-allergy (food), IA *vs* 2 bact. strains.





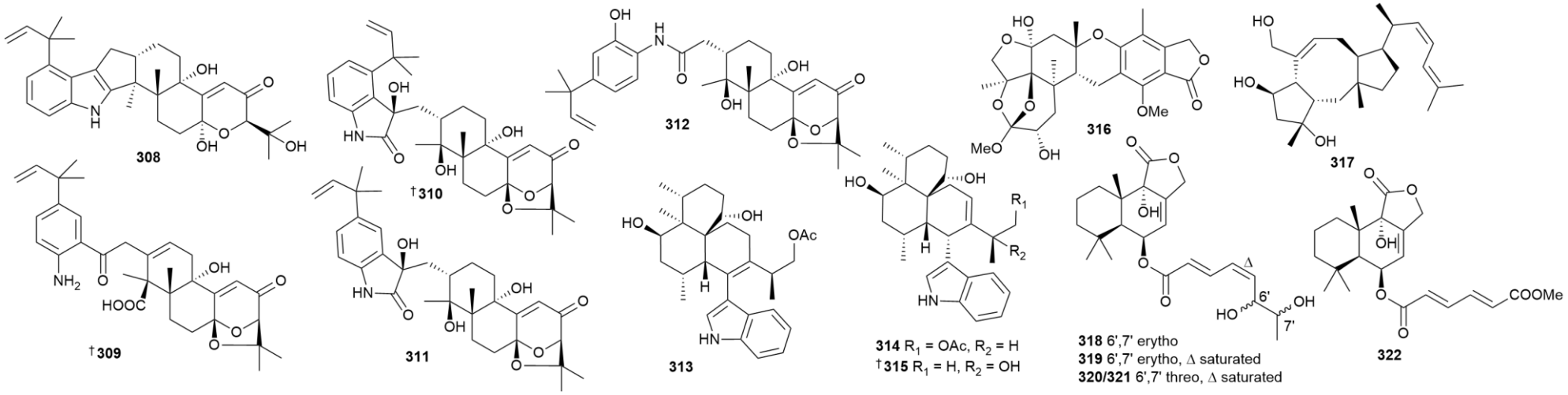






152 Ascomycota *Aspergillus* sp // (sediment) Bohai Sea, China // (±)-Dibrevianamides Q1 and Q2, the key precursors of asperginulin A from a marine-derived fungus
302 // N // (+)-dibrevianamide Q1 // IA *vs* 1 bact. strain; IA *vs* 1 virus strain.
303 // N // (-)-dibrevianamide Q1 // IA *vs* 1 bact. strain; IA *vs* 1 virus strain.
304 // N // (+)-dibrevianamide Q2 // IA *vs* 1 bact. strain; IA *vs* 1 virus strain.
305 // N // (-)-dibrevianamide Q2 // IA *vs* 1 bact. strain; IA *vs* 1 virus strain.

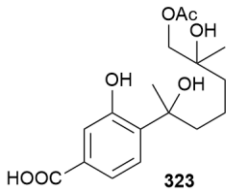
153 Ascomycota *Aspergillus* sp // (isopod, *Ligia exotica*) Dinghai, Zhoushan, Zheijang Province, China // Novel indole diketopiperazine stereoisomers from a marine-derived fungus *Aspergillus* sp
306 // N // (3*S*,3'*S*,5a*R*,5'a*R*,10b*R*,10'b*R*,11a*R*,11'a*R*)-3,3'-dibenzyl-2,2',3,3',5a,5'a,6,6',11,11a,11',11'a-dodecahydro-[10b,10'b-bipyrazino[1',2':1,5]pyrrolo[2,3-b]indole]-1,1',4,4'-tetraone // IA *vs* 1 HTCL.
307 // N // (3*R*,3'*S*,5a*R*,5'a*R*,10b*R*,10'b*R*,11a*S*,11'a*R*)-3,3'-dibenzyl-2,2',3,3',5a,5'a,6,6',11,11a,11',11'a-dodecahydro-[10b,10'b-bipyrazino[1',2':1,5]pyrrolo[2,3-b]indole]-1,1',4,4'-tetraone // IA *vs* 1 HTCL.



154 Ascomycota *Aspergillus* sp // (unspecified soft coral) Haikou Bay, Hainan province, China // Diverse indole-diterpenoids with protein tyrosine phosphatase 1B inhibitory activities from the marine coral-derived fungus *Aspergillus* sp. ZF-104
308 // N // penerpene O // weak inhib. PTP1B.
309 // N // penerpene P // mod. inhib. PTP1B.
310 // N // penerpene Q // IA *vs* PTP1B.
311 // N // penerpene R // IA *vs* PTP1B.
312 // N // penerpene S // IA *vs* PTP1B.
313 // N // penerpene T // IA *vs* PTP1B.
314 // N // penerpene U // weak inhib. PTP1B.
315 // N // penerpene V // IA *vs* PTP1B.

155 Ascomycota *Aspergillus* sp // (soft coral, *Sinularia* sp.) Sharm El-Sheikh, Egypt // Austalide derivative from marine-derived *Aspergillus* sp. and evaluation of its cytotoxic and ADME/TOPKAT properties
316 // N // austalide Z // IA *vs* 1 HTCL.

156 Ascomycota *Aspergillus* sp // (red alga, *Rhodomela confervoides*) Yantai, Shandong Province of China // New ophiobolin sesterterpenoid and drimane sesquiterpenoids from a marine-alga-derived fungus *Aspergillus* sp.
317 // N // 21-deoxo-21-hydroxyophiobolin U // IA to mod. activ. *vs* 5 phytoplankton.
318 // N // ustusolate K // IA to mod. activ. *vs* 5 phytoplankton.
319 // N // ustusolate L // IA to weak activ. *vs* 5 phytoplankton.
320 // N // ustusolates M // IA to weak activ. *vs* 5 phytoplankton.
321 // N // ustusolates N // IA to weak activ. *vs* 5 phytoplankton.
322 // N // ustusolate O // weak to mod. activ. *vs* 5 phytoplankton.



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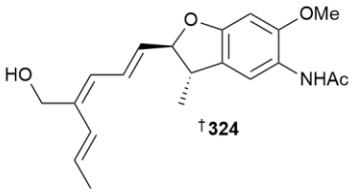
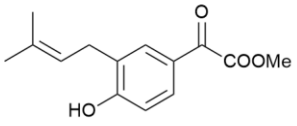


†**324**



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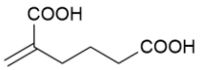

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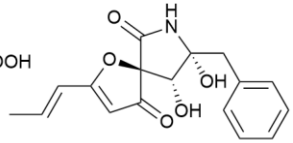

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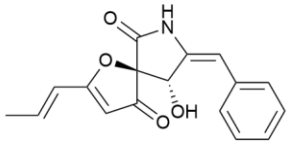

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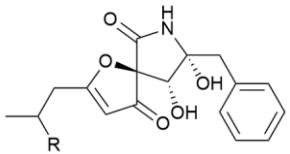


329 R = OH
330 R = OMe
331 R = H

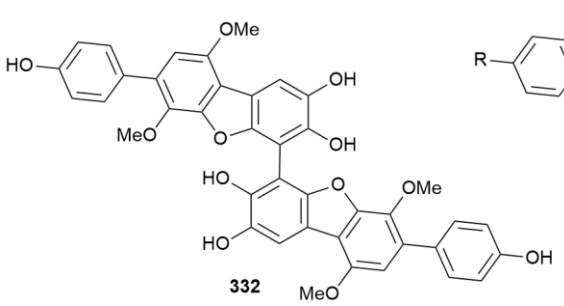
157 Ascomycota *Aspergillus* sp // (sediment) Atlantic Ocean // Phenolic bisabolanes from the marine-derived fungus *Aspergillus* sp. MEA11
323 // N // 11-acetylated-12-hydroxysydonic acid // IA *vs* α-glucosidase.

158 Ascomycota *Aspergillus* sp // (unspecified sponge) Xisha Is., China // Dibetanide, a new benzofuran derivative with the rare conjugated triene side chain from a sponge-associated fungus *Aspergillus* species
324 // N // dibetanide // IA *vs* 2 bact. strains; IA *vs* 1 virus strain.

159 Ascomycota *Aspergillus* sp // (brown alga, *Sargassum* sp.) Yongxing Is., Xisha Is., China // A glyoxylate-containing benzene derivative and butenolides from a marine algicolous fungus *Aspergillus* sp. SCSIO 41304
325 // N // methyl 2-(4-hydroxy-3-(3′-methyl-2′-butenyl)phenyl)-2-oxoacetate // IA *vs* 6 bact. strains; IA *vs* AChE; IA *vs* PL.

160 Ascomycota *Aspergillus* sp // (coral, *Acropora digitifera*) Subi Reef, South China Sea // A new unsaturated fatty acid from marine-derived fungus *Aspergillus* sp. SCAU150
326 // N // pantheric acid G // IA *vs* 6 fungal strains.

161 Ascomycota *Aspergillus micronesiensis* // (sediment) South China Sea // New azaspirene derivatives from marine-derived fungus A*spergillus micronesiensis* NF666
327 // N // azaspirene A // IA *vs* 6 bact. strains.
328 // N // azaspirene B // IA *vs* 6 bact. strains.
329 // N // azaspirene C // IA *vs* 6 bact. strains.
330 // N // azaspirene D // IA *vs* 6 bact. strains.
331 // N // azaspirene E // IA *vs* 6 bact. strains.



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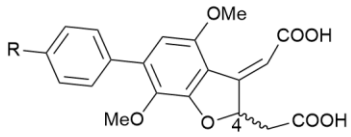
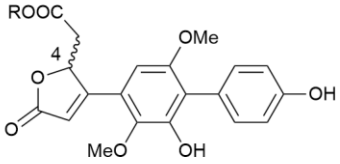
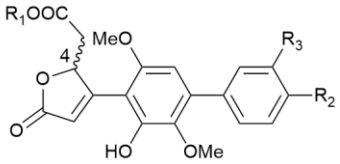


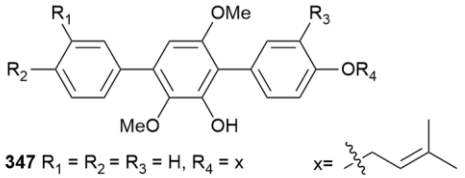
†**333** 4*S*, R = H
†**334** 4*R*, R = H
†**335** 4*S*, R = OH
†**336** 4*R*, R = OH



337 4*S*, R = Me
338 4*R*, R = Me
†**339** 4*S*, R = H
†**340** 4*R*, R = H



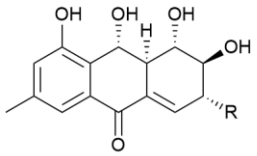
†**341** 4*R*, R_1 = R_2 = R_3 = H
†**342** 4*S*, R_1 = R_2 = R_3 = H
†**343** 4*R*, R_1 = Me, R_2 = OH, R_3 = H
†**344** 4*S*, R_1 = Me, R_2 = OH, R_3 = H
†**345** 4*R*, R_1 = H, R_2 = R_3 = OH
†**346** 4*S*, R_1 = H, R_2 = R_3 = OH



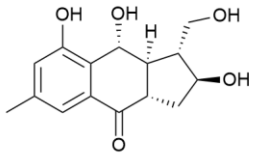
347 R_1 = R_2 = R_3 = H, R_4 = x
348 R_1 = R_2 = H, R_3 = OMe, R_4 = x
349 R_1 = R_3 = H, R_2 = OH, R_4 = x
350 R_1 = H, R_2 = OH, R_4 = OMe, R_3 = x
351 R_1 = x, R_2 = R_3 = OH, R_4 = x
352 R_1 = x, R_2 = OH, R_3 = H, R_4 = OMe

162 Ascomycota *Aspergillus* sp // (unspecified sponge) Weizhou Is., Beibu Gulf, China // Structurally various p-terphenyls with neuraminidase inhibitory from a sponge derived fungus *Aspergillus* sp. SCSIO41315

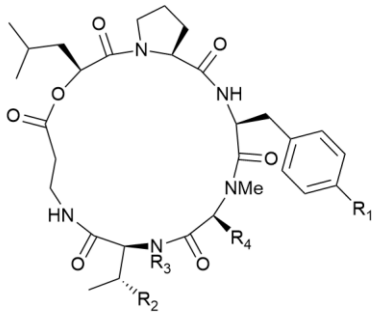
332 // N // asperterphenyl A // IA *vs* 7 HTCLs; weak to mod. activ. *vs* 4 virus strains; weak inhib. neuraminidase.
333 // N // (+)-asperterphenyl B // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
334 // N // (–)-asperterphenyl B // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
335 // N // (+)-asperterphenyl C // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
336 // N // (–)-asperterphenyl C // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
337 // N // (+)-asperterphenyl D // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
338 // N // (–)-asperterphenyl D // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
339 // N // (+)-asperterphenyl E // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
340 // N // (–)-asperterphenyl E // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
341 // N // (+)-asperterphenyl F // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
342 // N // (–)-asperterphenyl F // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
343 // N // (+)-asperterphenyl G // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
344 // N // (–)-asperterphenyl G // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
345 // N // (+)-asperterphenyl H // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
346 // N // (–)-asperterphenyl H // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; weak inhib. NA.
347 // N // asperterphenyl I // IA to mod. cytotox. *vs* 7 HTCLs; IA *vs* 1 virus strain; IA *vs* NA.
348 // N // asperterphenyl J // IA to pot. cytotox. *vs* 7 HTCLs; IA *vs* 1 virus strain; IA *vs* NA.
349 // N // asperterphenyl K // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; IA *vs* NA.
350 // N // asperterphenyl L // IA to weak cytotox. *vs* 7 HTCLs; weak activ. *vs* 1 virus strain; IA *vs* NA.
351 // N // asperterphenyl M // IA to pot. cytotox. *vs* 7 HTCLs; IA *vs* 1 virus strain; IA *vs* NA.
352 // N // asperterphenyl N // IA *vs* 7 HTCLs; IA *vs* 1 virus strain; IA *vs* NA.



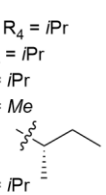
†**353** R = H
†**354** R = OH



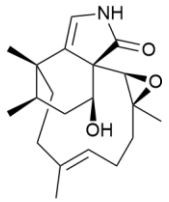
†**355**



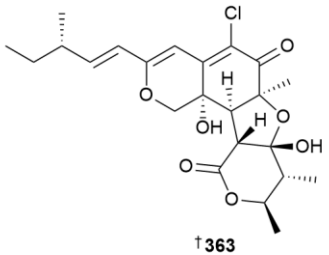
†**356** R_1 = H, R_2 = OH, R_3 = Me, R_4 = *i*Pr
†**357** R_1 = OH, R_2 = R_3 = Me, R_4 = *i*Pr
†**358** R_1 = R_2 = H, R_3 = Me, R_4 = *i*Pr
†**359** R_1 = H, R_2 = R_3 = Me, R_4 = *Me*
360 R_1 = H, R_2 = R_3 = Me, R_4 =



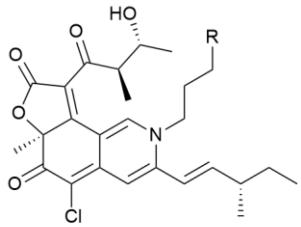
†**361** R_1 = R_3 = H, R_2 = Me, R_4 = *i*Pr



†**362**



†**363**



†**364** R = Me
365 R = Pr

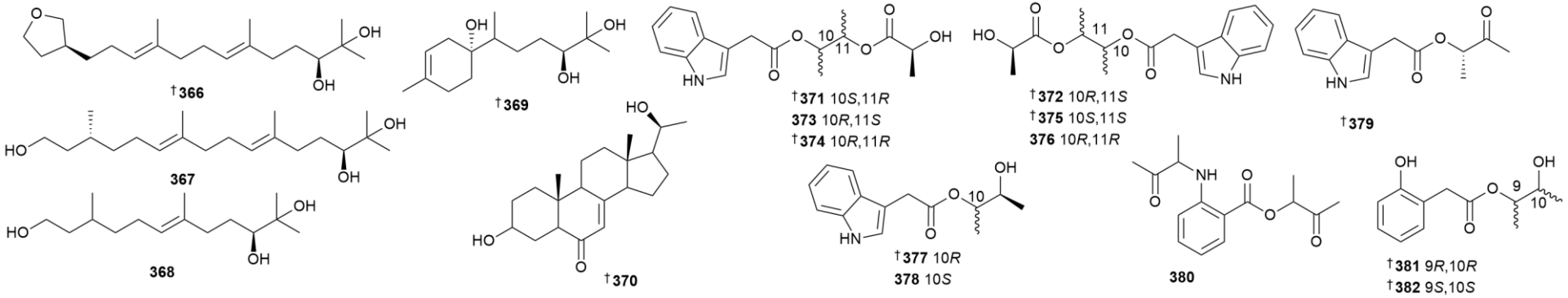
163 Ascomycota *Asteromyces cruciatus* // (brown alga, *Sargassum pallidum*) Sea of Japan // Anthraquinone derivatives and other aromatic compounds from marine fungus *Asteromyces cruciatus* KMM 4696 and their effects against *Staphylococcus aureus*
353 // N // acruciquinone A // IA *vs* 1 bact. strain.
354 // N // acruciquinone B // IA *vs* 1 bact. strain.
355 // N // acruciquinone C // IA *vs* 1 bact. strain.

164 Ascomycota *Beauveria felina* // (ascidian, *Styela plicata*) North Atoll, Xisha Is., China // Integrating genomics and metabolomics for the targeted discovery of new cyclopeptides with antifungal activity from a marine-derived fungus *Beauveria felina*
356 // N // isaridin I // IA *vs* 1 fungal strain.
357 // N // isaridin J // IA *vs* 1 fungal strain.
358 // N // isaridin K // IA *vs* 1 fungal strain.
359 // N // isaridin L // IA *vs* 1 fungal strain.
360 // N // isaridin M // IA *vs* 1 fungal strain.
361 // N // isaridin N // IA *vs* 1 fungal strain.

165 Ascomycota *Biatriospora* sp // (sponge, *Dragmacidon reticulatum*) São Paulo State, Brazil // Phomactinine, the first nitrogen-bearing phomactin, produced by *Biatriospora* sp. CBMAI 1333
362 // N // phomactinine // weak inhib. platelet activating factor receptor (PAFR).

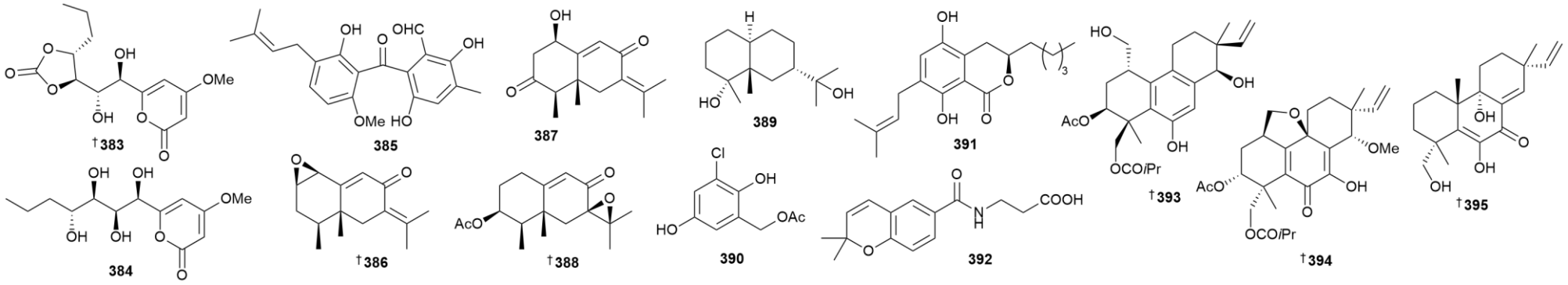
166 Ascomycota *Chaetomium globosum* // (seawater) Yap Trench, Pacific Ocean // A new chloro-azaphilone derivative with pro-angiogenesis activity from the hadal trench-derived fungus *Chaetomium globosum* YP-106
363 // N // chaetoviridin L // weak pro-angiogenic activ.

167 Ascomycota *Chaetomium globosum* // (brown alga, *Sargassum thunbergii*) Qingdao, China // Novel chlorinated and nitrogenated azaphilones with cytotoxic activities from the marine algal-derived fungus *Chaetomium globosum* 2020HZ23
364 // N // N-butyl-2-aza-2-deoxychaetoviridin A // IA *vs* 1 HTCL.
365 // N // N-hexyl-2-aza-2-deoxychaetoviridin A // IA *vs* 1 HTCL.



168 Ascomycota *Cladosporium oxysporum* // (jellyfish, *Aurelia aurita*) unspecified location // Peroxisome proliferator activated receptor-γ agonistic compounds from the jellyfish-derived fungus *Cladosporium oxysporum*
366 // N // cladopsol A // IA *vs* PPAR-γ.
367 // N // cladopsol B // weak inhib. PPAR-γ.
368 // N // cladopsol C // IA *vs* PPAR-γ.
369 // N // cladopsol D // IA *vs* PPAR-γ.
370 // N // cladopsol E // IA *vs* PPAR-γ.

169 Ascomycota *Colletotrichum gloeosporioides* // (bivalve, *Meretrix meretrix*) South China Sea // Isolation and stereospecific synthesis of indole alkaloids with lipid-lowering effects from the marine-derived fungus *Colletotrichum gloeosporioides* BB4
371 // N // (+)-colletotrichindole A // weak inhib. adipogenesis.
372 // N // (–)-colletotrichindole A // IA *vs* inhib. adipogenesis.
373 // N // colletotrichindole B // weak inhib. adipogenesis.
374 // N // (+)-colletotrichindole C // NT.
375 // N // (–)-colletotrichindole C // NT.
376 // N // colletotrichindole D // NT.
377 // N // (+)-isoalternatine A // IA *vs* inhib. adipogenesis.
378 // N // (+)-alternatine A // weak inhib. adipogenesis.
379 // N // colletotrichindole E // IA *vs* inhib. adipogenesis.
380 // N // colletotrichaniline A // NT.
381 // N // (+)-colletotrichumdiol A // IA *vs* inhib. adipogenesis.
382 // N // (–)-colletotrichdiol A // IA *vs* inhib. adipogenesis.



170 Ascomycota *Curvularia* sp // (unspecified sponge) Xisha Is., China // Two new α-pyrone derivatives from sponge-derived fungus *Curvularia* sp. ZYX-Z-4
383 // N // curvulapyrone B // IA *vs* NO prod.; IA *vs* 5 fungal strains.
384 // N // curvulapyrone C // IA *vs* NO prod.; IA *vs* 5 fungal strains.

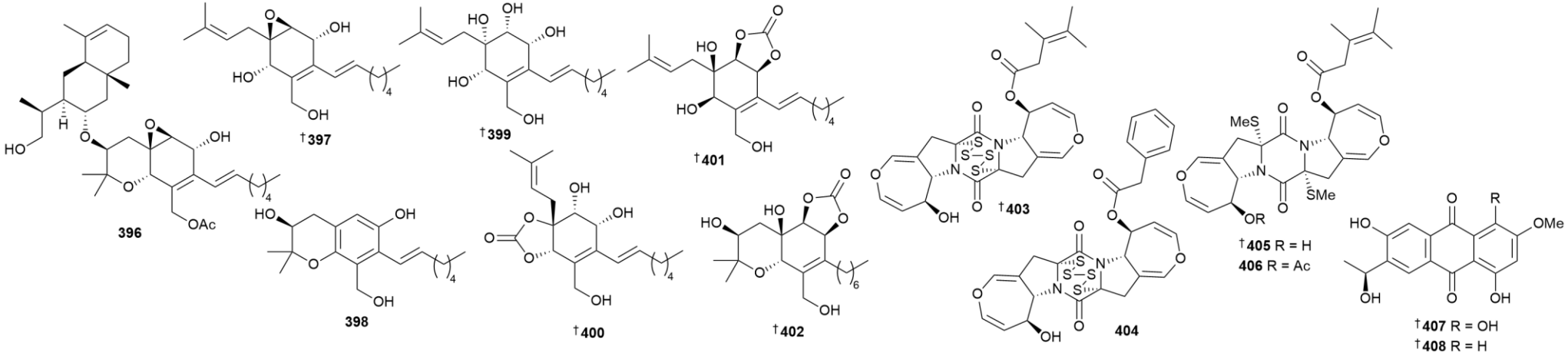
171 Ascomycota *Emericella nidulans* // (coral, *Pocillopora damicornis*) Weizhou Is., China // An epipolythiodioxopiperazine alkaloid and diversified aromatic polyketides with cytotoxicity from the Beibu Gulf coral-derived fungus *Emericella nidulans* GXIMD 02509
385 // N // 4a-*O*-methoxyarugosin H // IA *vs* 3 HTCLs; IA *vs* 1 NHCL.

172 Ascomycota *Emericellopsis maritima* // (sediment) inner Bay of Cadiz (Cádiz, Spain) // New eremophilane-type sesquiterpenes from the marine sediment-derived fungus *Emericellopsis maritima* BC17 and their cytotoxic and antimicrobial activities
386 // N // (1*S*,2*R*,4*S*,5*R*)-1-epoxyeremophil-7(11),9-dien-8-one // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 2 fungal strains.
387 // N // (1*R*,4*R*,5*R*)-1-hydroxyeremophil-7(11),9-dien-3,8-dione // NT.
388 // N // (3*S*,4*R*,5*R*,7*R*)-3-acetoxy-7(11)-epoxyeremophil-9-en-8-one // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 2 fungal strains.
389 // N // (4*R*,5*S*,7*S*,10*S*)-eremophilane-4,11-diol // NT.

173 Ascomycota *Epicoccum sorghinum* // (sediment) Zhulin saltern of Guangxi Province of China // A new chlorogentisyl alcohol derivative from the marine-derived fungus *Epicoccum sorghinum*
390 // N // 3-chloro-2,5-dihydroxybenzyl acetate // IA to mod. activ. *vs* 8 bact. strains.

174 Ascomycota *Eutypella* sp // (sediment) South China Sea // Study on secondary metabolites of marine-derived fungus *Eutypella* sp. F0219
391 // N // eutypellarin A // weak antioxid. activ.
392 // N // eutypellarin B // IA *vs* antioxid.

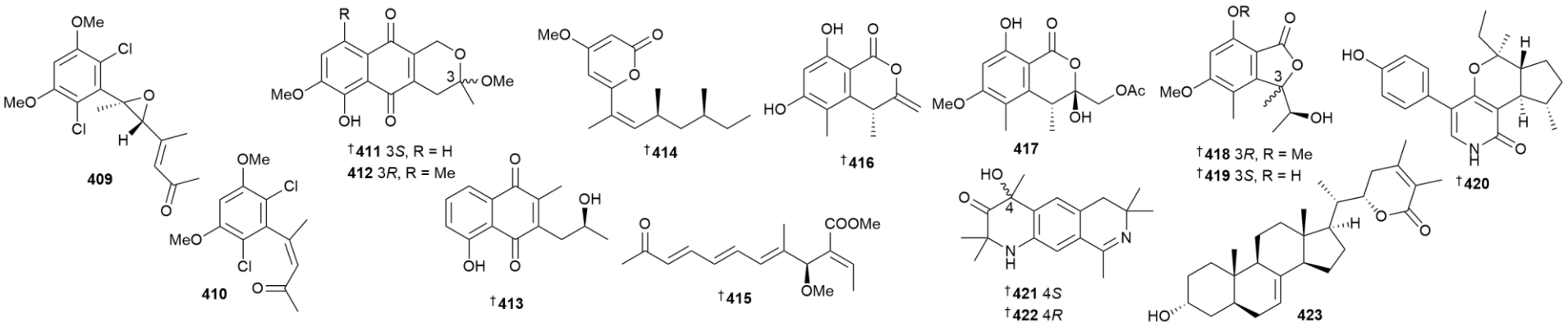
175 Ascomycota *Eutypella* sp // (sediment) London Is., Kongsfjorden, Norway // Pimarane-type diterpenes with anti-inflammatory activity from Arctic-derived fungus *Eutypella* sp. D-1
393 // N // eutypellenone F // IA *vs* NO prod.
394 // N // libertellenone Y // IA *vs* NO prod.
395 // N // libertellenone Z // weak inhib. NO prod.



176 Ascomycota *Eutypella* sp // (sediment) London Is., Kongsfjorden, Norway // Cytosporin derivatives from Arctic-derived fungus *Eutypella* sp. D-1 via the OSMAC approach
396 // N // eutypelleudesmane A // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; IA *vs* immunosuppression.
397 // N // cytosporin Y // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; IA *vs* immunosuppression.
398 // N // cytosporin Z // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; weak immunosuppressive activ.
399 // N // cytosporin Y1 // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; IA *vs* immunosuppression.
400 // N // cytosporin Y2 // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; IA *vs* immunosuppression.
401 // N // cytosporin Y3 // IA vs 4 HTCLs; IA vs 3 bact. strains; weak immunosuppressive activ.
402 // N // cytosporin E1 // IA *vs* 4 HTCLs; IA *vs* 3 bact. strains; IA *vs* immunosuppression.

177 Ascomycota *Exophiala mesophila* // (sediment) Indian Ocean // Cytotoxic epipolythiodioxopiperazines from the deep-sea-derived fungus *Exophiala mesophila* MCCC 3A00939
403 // N // graphiumin K // IA to weak cytotox. *vs* 5 HTCLs.
404 // N // graphiumin L // IA to weak cytotox. *vs* 5 HTCLs.
405 // N // graphiumin M // IA *vs* 5 HTCLs.
406 // N // graphiumin N // IA *vs* 5 HTCLs.

178 Ascomycota *Fusarium* sp // (mangrove sediment) Dong Zhai Gang mangrove natural reserve, Hainan Is., China // Two new anthraquinones from the marine-derived fungus *Fusarium* sp. J3-2
407 // N // (11*S*)-1,4,6-trihydroxy-7-(1-hydroxyethyl)-3-methoxyanthracene-9,10-dione // IA to weak activ. *vs* 7 bact. strains.
408 // N // (11*S*)-1,6-dihydroxy-7-(1-hydroxyethyl)-3-methoxyanthracene-9,10-dione // IA *vs* 7 bact. strains.

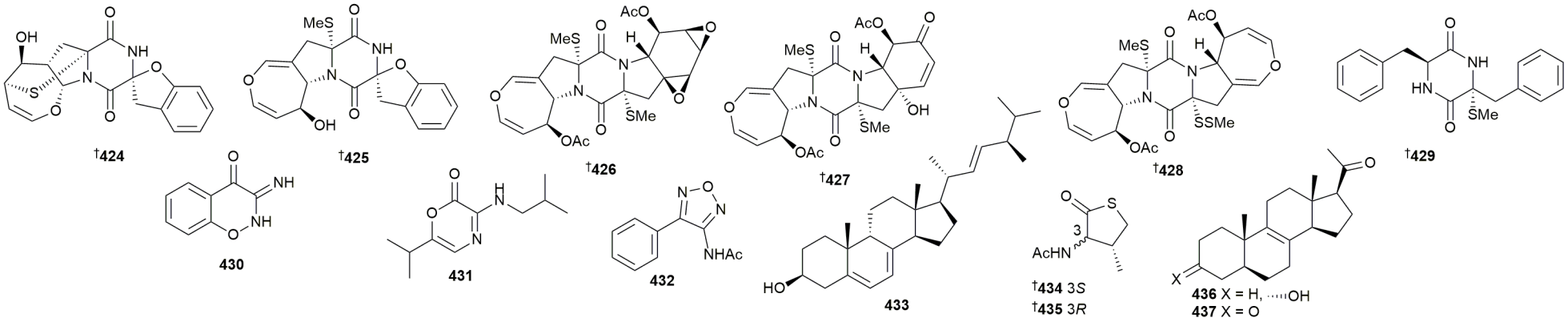


179 Ascomycota *Fusarium solani* // (sediment) Shenhu, South China Sea // Antibacterial polyketides isolated from the marine-derived fungus *Fusarium solani* 8388
409 // N // fusarisolin F // IA *vs* 3 HTCLs; IA *vs* 4 bact. strains.
410 // N // fusarisolin G // IA *vs* 3 HTCLs; IA *vs* 4 bact. strains.
411 // N // fusarisolin H // IA *vs* 3 HTCLs; IA to mod. inhib. *vs* 4 bact. strains.
412 // N // fusarisolin I // IA *vs* 3 HTCLs; IA to mod. inhib. *vs* 4 bact. strains.
413 // N // fusarisolin J // IA to weak cytotox. *vs* 3 HTCLs; IA to mod. inhib. *vs* 4 bact. strains.
414 // N // fusarisolin K // IA *vs* 3 HTCLs; IA *vs* 4 bact. strains.
415 // N // fusarin I // IA *vs* 3 HTCLs; IA *vs* 4 bact. strains.

181 Ascomycota *Hamigera avellanea* // (sponge, *Mycale* sp.) Samaesan Island, Chonburi Province, Gulf of Thailand // Pentaketides and 5-p-hydroxyphenyl-2-pyridone derivative from the culture extract of a marine sponge-associated fungus *Hamigera avellanea* KUFA0732
416 // N // (*R*)-6,8-dihydroxy-4,5-dimethyl-3-methylidene-3,4-dihydro-1*H*-2-benzopyran-1-one // IA *vs* 11 fungal strains.
417 // N // [(3*S*,4*R*)-3,8-dihydroxy-6-methoxy-4,5-dimethyl-1-oxo-3,4-dihydro-1*H*-isochromen-3-yl]methyl acetate // NT.
418 // N // (*R*)-5,7-dimethoxy-3-((*S*)-(1-hydroxyethyl)-3,4-dimethylisobenzofuran-1(3*H*)-one // IA *vs* 11 fungal strains.
419 // N // (*S*)-7-hydroxy-3-((*S*)-1-hydroxyethyl)-5-methoxy-3,4-dimethylisobenzofuran 1(3*H*)-one // IA *vs* 11 fungal strains.
420 // N // avellaneanone // IA *vs* 11 fungal strains.

182 Ascomycota *Hamigera avellanea* // (sponge, *Tethya maza*) Bai Tu Long, Quang Ninh province, Vietnam // A pair of undescribed alkaloid enantiomers from marine sponge-derived fungus *Hamigera avellanea* and their antimicrobial and cytotoxic activities
421 // N // (+)-hamiavemin A // IA *vs* 3 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
422 // N // (−)-hamiavemin A // IA *vs* 3 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.

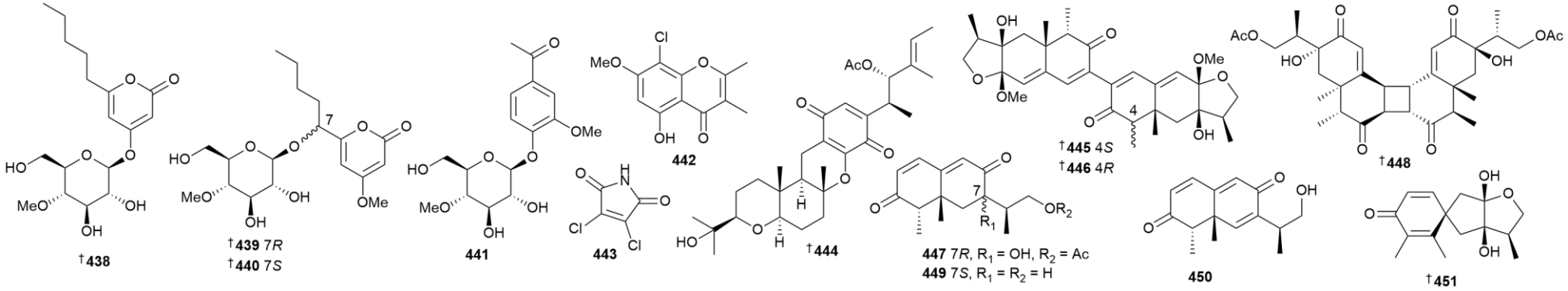
183 Ascomycota *Hypocrea* sp // (unspecified mussel) East Pacific Ocean // Hyposterolactone A, a 3α-hydroxy steroidal lactone from the deep-sea-derived fungus *Hypocrea* sp. ZEN14
423 // N // hyposterolactone A // IA *vs* 1 HTCL.



184 Ascomycota *Lecanicillium kalimantanense* // (mangrove sediment) Bailu park, Sanya city, Hainan province, China // Lecanicilliums A–F, thiodiketopiperazine-class alkaloids from a mangrove sediment-derived fungus *Lecanicillium kalimantanense*
424 // N // lecanicillium A // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA *vs* 8 bact. strains.
425 // N // lecanicillium B // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA *vs* 8 bact. strains.
426 // N // lecanicillium C // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA *vs* 8 bact. strains.
427 // N // lecanicillium D // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA *vs* 8 bact. strains.
428 // N // lecanicillium E // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA *vs* 8 bact. strains.
429 // N // lecanicillium G // IA *vs* 2 HTCLs; IA *vs* brine shrimp; IA to weak activ. *vs* 8 bact. strains.

185 Basidiomycota *Lentinus sajor-caju* // (unspecified sea cucumber) Xisha Is., China. // Lentinuses A–B, two alkaloids from the marine-derived fungus *Lentinus sajor-caju* with potent anti-pulmonary fibrosis activity
430 // N // lentinus A // IA *vs* inhib. fibrosis.
431 // N // lentinus B // weak inhib. fibrosis.
432 // M // 3-acetylamino-4-phenylfurazan // weak inhib. fibrosis.
433 // M // 9β-ergosterol // weak inhib. fibrosis.

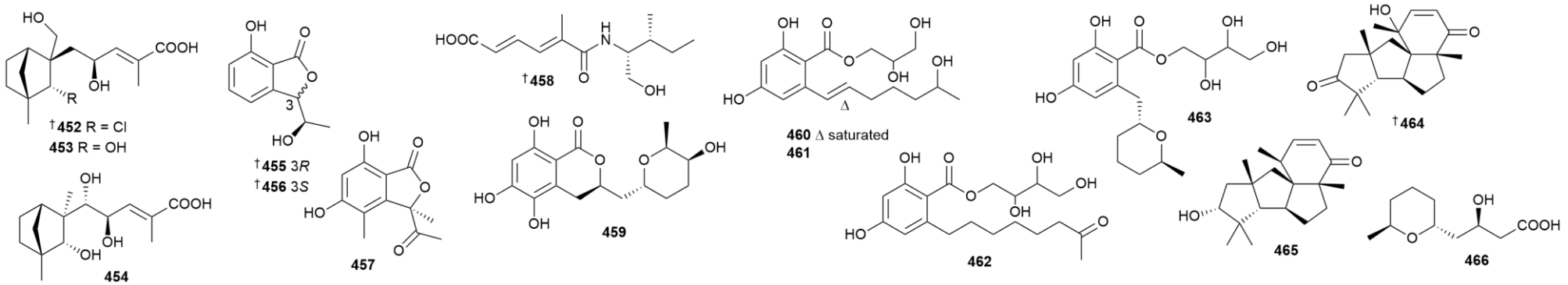
186 Basidiomycota *Meira* sp // (seawater) Chuuk Is., Federated States of Micronesia // Thiolactones and Δ8,9-pregnene steroids from the marine-derived fungus *Meira* sp. 1210CH-42 and their α-glucosidase inhibitory activity
434 // N // *N*-((3*S*,4*R*)-4-methyl-2-oxotetrahydrothiophen-3-yl)acetamide // IA *vs* α-glucosidase.
435 // M // *N*-((3*R*,4*R*)-4-methyl-2-oxotetrahydrothiophen-3-yl)acetamide // IA *vs* α-glucosidase.
436 // N // 1-((3*R*,5*S*,10*S*,13*S*,14*R*,17*S*)-3-hydroxy-10,13-dimethyl-2,3,4,5,6,7,10,11,12,13,14,15,16,17-tetradecahydro-1*H*-cyclopenta[a]phenanthren-17-yl)ethan-1-one // IA *vs* α-glucosidase.
437 // N // (5*S*,10*S*,13*S*,14*R*,17*S*)-17-acetyl-10,13-dimethyl-1,2,4,5,6,7,10,11,12,13,14,15,16,17-tetradecahydro-3H-cyclopenta[a]phenanthren-3-one // IA *vs* α-glucosidase.



187 Ascomycota *Metarhizium* sp // (seawater) Qingdao Huiquan Bay, China // Bioactive α-pyrone and phenolic glucosides from the marine-derived *Metarhizium* sp. P2100
438 // N // 4-(4'-methoxy-β-D-glucosyl)-6-pentyl-2-pyrone // IA *vs* 3 bact. strains; IA *vs* 3 fungal strains; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* anti-inflam.; IA *vs* α-amylase.
439 // N // 7(*R*)-(40-methoxy-β-D-glucosyl)-4-methoxy-6-pentyl-2-pyrone // IA *vs* 3 bact. strains; IA *vs* 3 fungal strains; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* anti-inflam.; IA *vs* α-amylase.
440 // N // 7(*S*)-(40-methoxy-β-D-glucosyl)-4-methoxy-6-pentyl-2-pyrone // IA *vs* 3 bact. strains; IA *vs* 3 fungal strains; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* anti-inflam.; IA *vs* α-amylase.
441 // N // lecaniside D // IA *vs* 3 bact. strains; IA *vs* 3 fungal strains; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* anti-inflam.; IA *vs* α-amylase.

188 Ascomycota *Mollisia* sp // (mangrove sediment) Hongsha River estuary, Hainan Is., China // New chlorinated metabolites and antiproliferative polyketone from the mangrove sediments-derived fungus *Mollisia* sp. SCSIO41409
442 // N // 8-chlorine-5-hydroxy-2,3-dimethyl-7-methoxychromone // IA *vs* 7 HTCLs; IA *vs* 6 fungal strains; IA *vs* 4 bact. strains.
443 // M // 3,4-dichloro-1*H*-pyrrole-2,5-dione // IA to weak activ. *vs* 7 HTCLs; IA to weak activ. *vs* 6 fungal strains; IA to weak activ. *vs* 4 bact. strains.
444 // M // stemphone C // IA to weak activ. *vs* 7 HTCLs: IA *vs* 6 fungal strains; IA to pot. activ. *vs* 4 bact. strains.

189 Ascomycota *Paraphaeosphaeria sporulosa, Paraphaeosphaeria sporulosum* // (sediment) Bohai Bay, Liaoning Province, China // Paraconulones A–G: eremophilane sesquiterpenoids from the marine-derived fungus *Paraconiothyrium sporulosum* DL-16
445 // N // paraconulone A // NT.
446 // N // paraconulone B // weak inhib. NO prod.
447 // N // paraconulone C // weak inhib. NO prod.
448 // N // paraconulone D // weak inhib. NO prod.
449 // N // paraconulone E // weak inhib. NO prod.
450 // N // paraconulone F // IA *vs* NO prod.
451 // N // paraconulone G // weak inhib. NO prod.

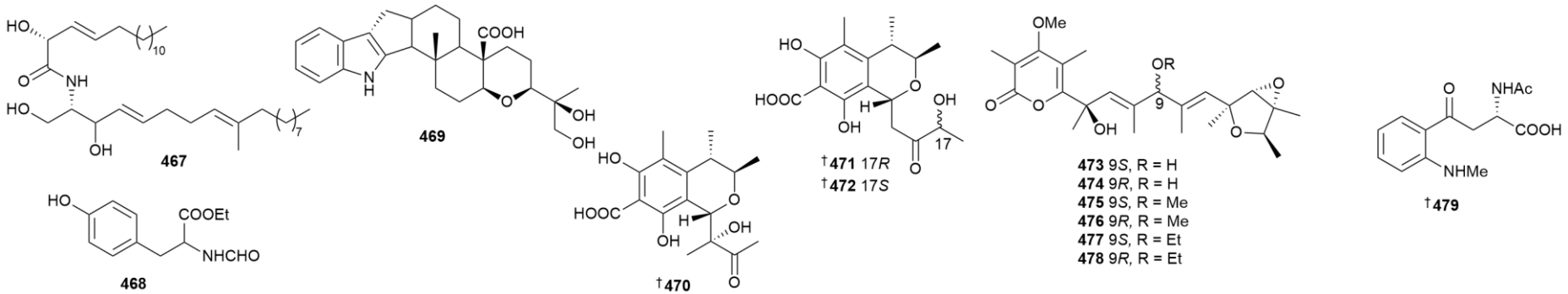


190 Ascomycota *Paraconiothyrium sporulosum* // Bohai Bay, Liaoning Province, China // Santalane-type sesquiterpenoids and isobenzofuranones from cultures of *Paraconiothyrium sporulosum* YK-03
452 // N // parasantalenoic acid A // IA *vs* NO prod.
453 // N // parasantalenoic acid B // IA *vs* NO prod.
454 // N // parasantalenoic acid C // weak inhib. NO prod.
455 // N // paraphthalide A // IA *vs* NO prod.
456 // N // paraphthalide B // IA *vs* NO prod.

191 Ascomycota *Paraphoma radicina* // (sediment) Beaufort Sea, North Alaska // New secondary metabolites produced by *Paraphoma radicina* FB55 as potential antifungal agents
457 // N // 3-acetyl-5,7-dihydroxy-3,4-dimethylisobenzofuran-1(3*H*)-one // IA *vs* 4 fungal strains.
458 // N // (2*E*,4*E*)-6-((1-hydroxy-3-methylpentan-2-yl)amino)-5-methyl-6-oxohexa-2,4-dienoic acid // NT.

192 Ascomycota *Penicillium antarcticum* // (brown alga, *Sargassum miyabei*) Sea of Japan // New bioactive β-resorcylic acid derivatives from the alga-derived fungus *Penicillium antarcticum* KMM 4685
459 // N // 14-hydroxyasperentin B // NT.
460 // N // β-resoantarctine A // IA *vs* 6 HTCLs; IA *vs* P-glycoprotein.
461 // N // 8-dehydro-β-resoantacrtine A // IA *vs* 6 HTCLs; IA *vs* P-glycoprotein.
462 // N // β-resoantarctine B // IA *vs* 6 HTCLs; weak inhib. P-glycoprotein.
463 // N // β-resoantarctine C // IA *vs* 6 HTCLs; NT *vs* P-glycoprotein.

193 Ascomycota *Penicillium antarcticum* // (sediment) Sakhalin Is., Russia // New cyclopiane diterpenes and polyketide derivatives from marine sediment-derived fungus *Penicillium antarcticum* KMM 4670 and their biological activities
464 // N // 4-hydroxyleptosphin C // IA to weak activ. *vs* 2 bact. strains; weak activ. *vs* 1 fungal strain; IA *vs* 1 peptidase; weak cytotox. *vs* 1 NHCL.
465 // N // 13-e*pi*-conidiogenone F // IA *vs* 2 bact. strains; weak activ. *vs* 1 fungal strain; IA *vs* 1 peptidase; IA *vs* 1 NHCL.
466 // N // antaketide A // IA to weak activ. *vs* 2 bact. strains; weak activ. *vs* 1 fungal strain; IA *vs* 1 peptidase; weak cytotox. *vs* 1 NHCL.



194 Ascomycota *Penicillium chrysogenum* // (seawater) Indian Ocean // Secondary metabolites from the marine-derived fungus *Penicillium chrysogenum* Y20-2, and their pro-angiogenic activity
467 // N // (2*R*,*E*)-*N*-((2*S*,4*E*,8*E*)-1,3-dihydroxy-9-methyloctadeca-4,8-dien-2-yl)-2-hydroxyhexadec-3-enamide // IA *vs* pro-angiogenesis.

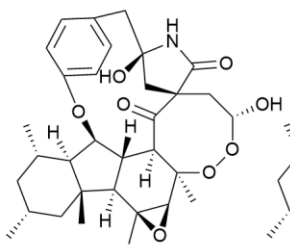
195 Ascomycota *Penicillium chrysogenum* // (seawater) Indian Ocean // Secondary metabolites from marine derived fungus *Penicillium chrysogenum* Y19-1 with proangiogenic and antithrombotic activities
468 // N // ethyl formyltyrosinate // IA *vs* antithrombosis; IA *vs* antiangiogenesis.

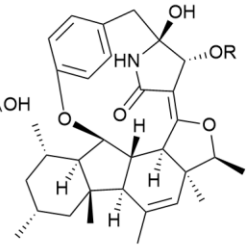
196 Ascomycota *Penicillium citrinum* // Bohai Sea, Huanghua, Hebei Province, China // Anti-IAV indole-diterpenoids from the marine-derived fungus *Penicillium citrinum*
469 // N // penijanthine E // IA *vs* 2 virus strains.

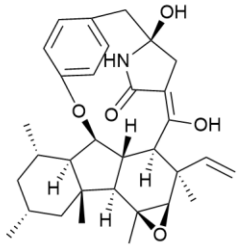
197 Ascomycota *Penicillium citrinum* // (sediment) Western Pacific Ocean // Penidihydrocitrinins A–C: new polyketides from the deep-sea-derived *Penicillium citrinum* W17 and their anti-inflammatory and anti-osteoporotic bioactivities
470 // N // penidihydrocitrinin A // weak inhib. NO prod.; IA *vs* anti-osteoporosis.
471 // N // penidihydrocitrinin B // weak inhib. NO prod.; IA *vs* anti-osteoporosis.
472 // N // penidihydrocitrinin C // weak inhib. NO prod.; IA *vs* anti-osteoporosis.

198 Ascomycota *Penicillium cyclopium* // (sediment) East China Sea // Isolation and characterization of three pairs of verrucosidin epimers from the marine sediment-derived fungus *Penicillium cyclopium* and configuration revision of penicyrone A and related analogues
473 // R // penicyrone A // IA to weak activ. *vs* 18 bact. strains.
474 // R // penicyrone B // IA to weak activ. *vs* 18 bact. strains.
475 // R // (9*R*)-*O*-methylpenicyrone // IA to mod. activ. *vs* 18 bact. strains.
476 // R // (9*S*)-*O*-methylpenicyrone // IA to mod. activ. *vs* 18 bact. strains.
477 // N // (9*R*)-*O*-ethylpenicyrone // IA to mod. activ. *vs* 18 bact. strains.
478 // N // (9*S*)-*O*-ethylpenicyrone // IA to mod. activ. *vs* 18 bact. strains.

199 Ascomycota *Penicillium citrinum* // (unspecified gammarid shrimp) central sea, Papua New Guinea // Chemical constituents of the deep-sea gammarid shrimp-derived fungus *Penicillium citrinum* XIA-16
479 // N // (S)-2-acetamido-4-(2-(methylamino)phenyl)-4-oxobutanoic acid // IA *vs* inhib. ferrotopsis.


†480


481 R = Me
482 R = H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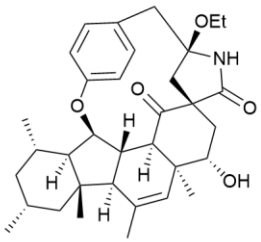
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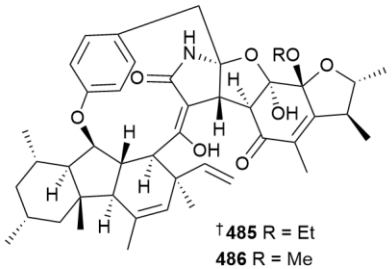
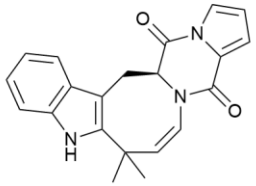
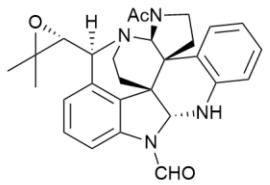

†**485** R = Et
486 R = Me

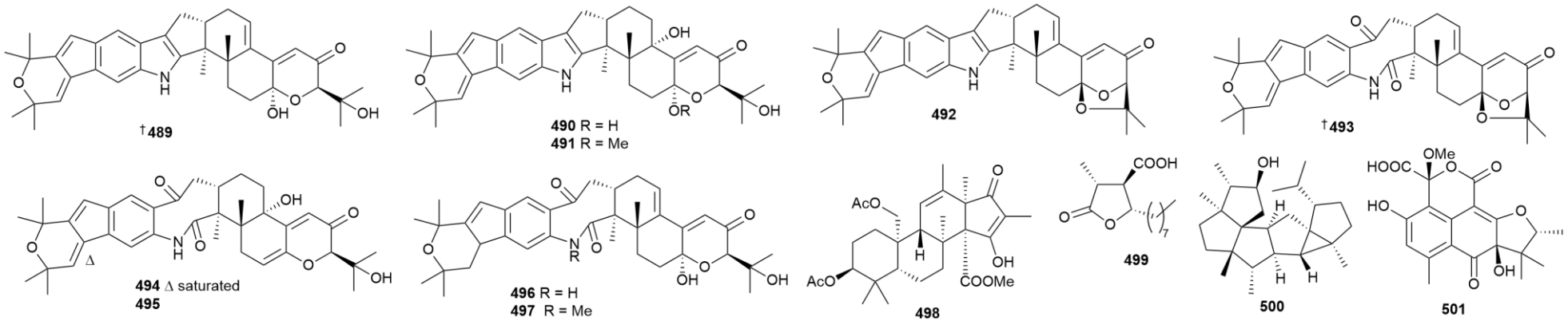

†487


488

200 Ascomycota *Penicillium citrinum* // (crab, *Chiromantes haematocheir*) Zhoushan, Zhejiang, China // Perpyrrospirone A, an unprecedented hirsutellone peroxide from the marine-derived *Penicillium citrinum*
480 // N // perpyrrospirone A // IA to weak cytotox. *vs* 6 HTCLs.
481 // N // penicillione B // IA *vs* 6 HTCLs.
482 // N // penicillione C // IA *vs* 6 HTCLs.
483 // N // penicillione D // IA *vs* 6 HTCLs.
484 // N // penicillione E // IA *vs* 6 HTCLs.
485 // N // penicillione F // IA *vs* 6 HTCLs.
486 // N // penicillione G // weak cytotox. *vs* 6 HTCLs.

201 Ascomycota P*enicillium dimorphosporum* // (unidentified soft coral) South China Sea // New marine fungal deoxy-14,15-dehydroisoaustamide resensitizes prostate cancer cells to enzalutamide
487 // N // deoxy-14,15-dehydroisoaustamide // mod. resensitises cancer cells to drug via degradation of androgen receptor variant V7 (AR-V7); IA *vs* 6 HTCLs; IA *vs* 4 NHCLs.

202 Ascomycota *Penicillium expansum* // (sediment) Loire estuary, Le Croisic, France // Nature-inspired chemistry of complex alkaloids: combining targeted molecular networking approach and semisynthetic strategy to access rare communesins in a marine-derived *Penicillium expansum*
488 // N // communesin M // IA *vs* 2 HTCLs.

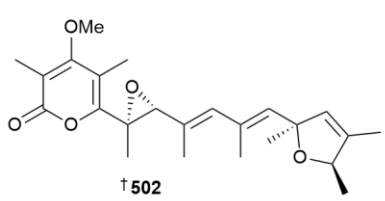


203 Ascomycota *Penicillium janthinellum, Paecilomyces formosus* // (unspecified source) Bohai Sea // Structural diversity and biological activities of indole-diterpenoids from *Penicillium janthinellum* by co-culture with *Paecilomyces formosus*
489 // N // janthinellumnine A // IA to weak activ. *vs* 2 virus strains; weak activ. *vs* 3 bact. strains; IA *vs* 1 NMCL; IA *vs* NA; IA to mod. inhib. 5 protein phophatases.
490 // N // janthinellumnine B // IA to weak activ. *vs* 2 virus strains; IA *vs* 3 bact. strains; IA *vs* 1 NMCL; IA *vs* NA; IA to mod. inhib. 5 protein phophatases.
491 // N // janthinellumnine C // IA *vs* 2 virus strains; IA *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA *vs* 5 protein phophatases.
492 // N // janthinellumnine D // IA *vs* 2 virus strains; IA *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA to pot. inhib. 5 protein phophatases.
493 // N // janthinellumnine E // IA *vs* 2 virus strains; IA *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA to mod. inhib. 5 protein phophatases.
494 // N // janthinellumnine F // IA *vs* 2 virus strains; IA *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA *vs* 5 protein phophatases.
495 // N // janthinellumnine G // IA *vs* 2 virus strains; IA. *vs* 3 bact. strains; IA *vs* 1 NMCL; IA *vs* NA; IA *vs* 5 protein phophatases.
496 // N // janthinellumnine H // IA *vs* 2 virus strains; weak activ. *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA *vs* 5 protein phophatases.
497 // N // janthinellumnine I // IA *vs* 2 virus strains; IA. *vs* 3 bact. strains; NT *vs* 1 NMCL; NT *vs* NA; IA to mod. inhib. *vs* 5 protein phophatases.

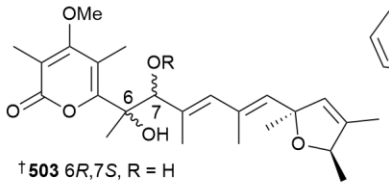
204 Ascomycota *Penicillium ochrochloron* // (sediment) St. Peter-Ording, Germany // Two new metabolites from a marine-derived fungus *Penicillium ochrochloron*
498 // N // andrastin I // IA *vs* 1 HTCL; IA *vs* 4 bact. strains.
499 // N // ochrochloronic acid // IA *vs* 1 HTCL; IA *vs* 4 bact. strains.

205 Ascomycota *Penicillium oxalicum* // (brown alga, *Spatoglossum* sp.) Phu Quy, Binh Thuan, Vietnam // New sesterterpenoid from the marine fungus *Penicillium oxalicum* M893
500 // N // oxaliterpenoid // IA to weak activ. *vs* 6 bact. strains; weak activ. *vs* 1 fungal strain.

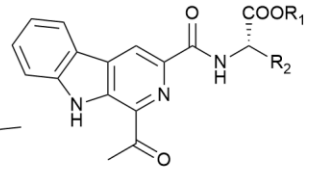
206 Ascomycota *Penicillium oxalicum* // (sediment) South China Sea // A new cytotoxic phenalenone derivative from *Penicillium oxalicum*
501 // N // peniciphenalenin G // IA *vs* 1 HTCL and 1 NHCL.



†**502**

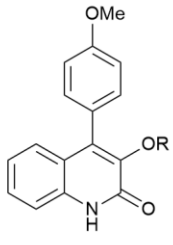


†**503** 6*R*,7*S*, R = H
†**504** 6*R*,7*R*, R = H
†**505** 6*S*,7*R*, R = H
506 6*S*,7*S*, R = Ac

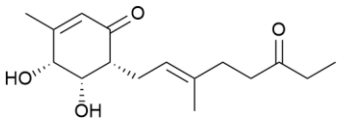


†**507** R_1 = H, R_2 = Me
†**508** R_1 = Me, R_2 =

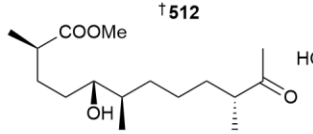
509 R_1 = H, R_2 = *i*pro



510 R = Me
511 R = H



†**512**



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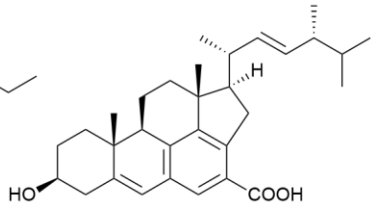


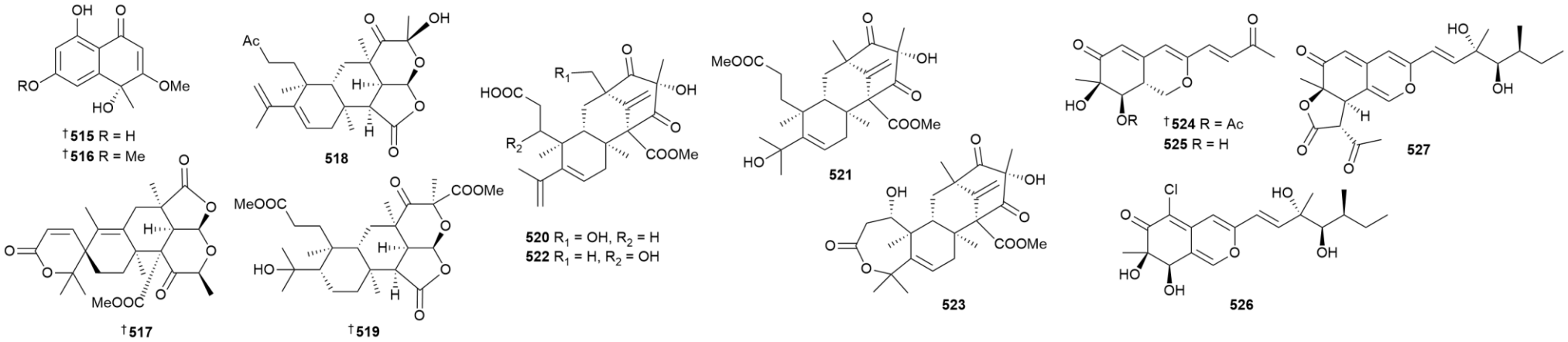
†**514**

207 Ascomycota *Penicillium polonicum* // (sediment) South China Sea // Five new verrucosidin derivatives from *Penicillium polonicum*, a deep-sea cold-seep sediment isolated fungus
502 // N // poloncosidin G // IA to mod. activ. *vs* 5 bact. strains.
503 // N // poloncosidin H // IA to mod. activ. *vs* 5 bact. strains.
504 // N // poloncosidin I // IA to mod. activ. *vs* 5 bact. strains.
505 // N // poloncosidin J // IA to weak activ. *vs* 5 bact. strains.
506 // N // poloncosidin K // IA to mod. activ. *vs* 5 bact. strains.

208 Ascomycota *Penicillium raistrickii* // (sediment) Zhanhuan county, China // Alkaloid diversity expansion of a talent fungus *Penicillium raistrichii* through OSMAC-based cultivation
507 // N // raistrimide A // mod. activ. *vs* 2 bact. strains; IA *vs* 1 fungal strain.
508 // N // raistrimide B // IA *vs* 2 bact. strains; IA *vs* 1 fungal strain.
509 // N // raistrimide C // IA *vs* 2 bact. strains; IA *vs* 1 fungal strain.
510 // N // raistrimide D // IA to weak activ. *vs* 2 bact. strains; IA *vs* 1 fungal strain.
511 // M // 3-hydroxy-4-(4′-methoxyphenyl)-2(1*H*)-quinolinone // IA *vs* 2 bact. strains; IA *vs* 1 fungal strain.

209 Ascomycota *Penicillium rubens* // (coral, *Hemicorallium* cf. *imperiale*) Magellan Seamount // New polyketide and sesquiterpenoid derivatives from the Magellan Seamount-derived fungus *Penicillium rubens* AS-130
512 // N // rubenpolyketone A // IA to weak activ. *vs* 9 bact. strains.
513 // N // chermesiterpenoid D // IA *vs* 9 bact. strains.

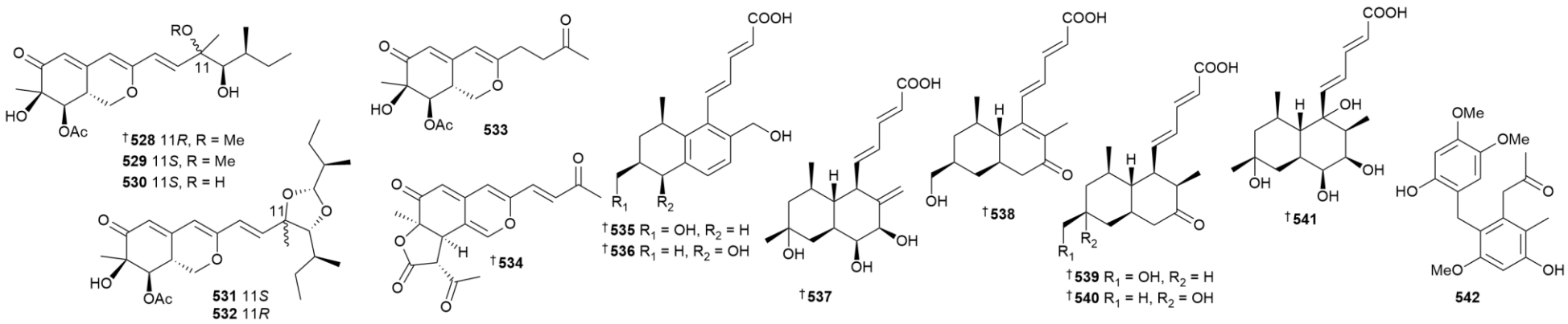
210 Ascomycota *Penicillium rubens* // (coral, *Hemicorallium* cf. *imperiale*) Magellan Seamounts, West Pacific // Rubensteroid A, a new steroid with antibacterial activity from *Penicillium rubens* AS-130
514 // N // rubensteroid A // IA to pot. activ. *vs* 10 bact. strains.



211 Ascomycota *Penicillium sajarovii, Aspergillus protuberus* // (sea urchin, *Scaphechinus mirabilis*) Troitsa bay, Sea of Japan // Bioactive polyketides from the natural complex of the sea urchin-associated fungi *Penicillium sajarovii* KMM 4718 and *Aspergillus protuberus* KMM 4747
515 // N // sajaroketide A // IA *vs* inhib. urease; IA to weak activ. *vs* 2 bact. strains; IA *vs* 1 fungal strain; IA *vs* 2 HTCLs; weak cytoprotective effect.
516 // N // sajaroketide B // IA *vs* inhib. urease; IA *vs* 2 bact. strains; IA *vs* 1 fungal strain; IA *vs* 2 HTCLs; IA *vs* cytoprotective effect.

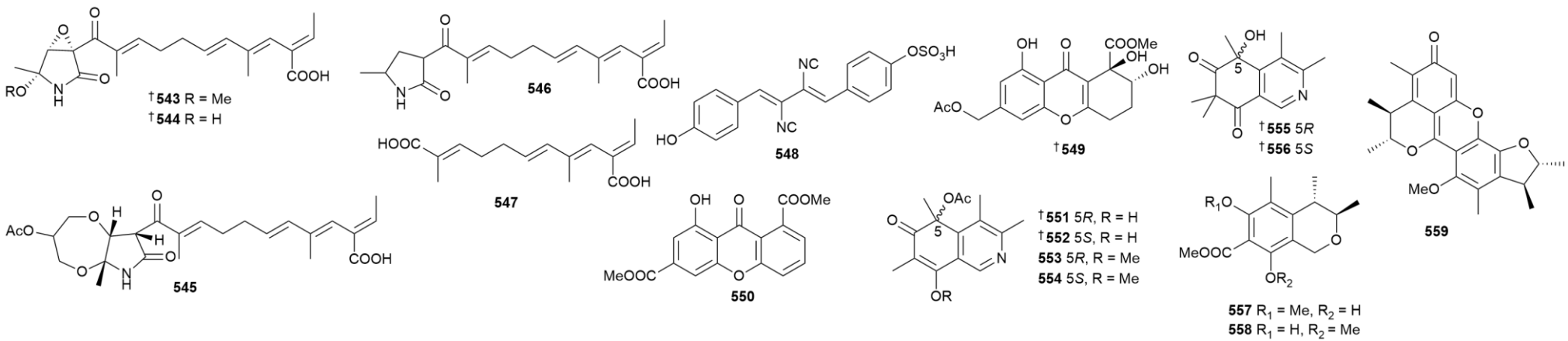
212 Ascomycota *Penicillium sclerotiorum* // (mollusc, *Onchidium* sp.) Xuwen, Guangdong province, China // Seven new meroterpenoids from the fungus *Penicillium sclerotiorum* GZU-XW03–2
517 // N // peniscmeroterpenoid H // IA *vs* NO prod.
518 // N // peniscmeroterpenoid I // IA *vs* NO prod.
519 // N // peniscmeroterpenoid J // IA *vs* NO prod.
520 // N // peniscmeroterpenoid K // IA *vs* NO prod.
521 // N // peniscmeroterpenoid L // IA *vs* NO prod.
522 // N // peniscmeroterpenoid M // IA *vs* NO prod.
523 // N // peniscmeroterpenoid N // IA *vs* NO prod.

213 Ascomycota *Penicillium sclerotiorum* // (red alga, *Grateloupia* sp.) Yilan, Taiwan // Additional azaphilones from the marine algae-derived fungus *Penicillium sclerotiorum* with anti-angiogenic activity
524 // N // * // IA *vs* anti-angiogenesis.
525 // N // * // IA *vs* anti-angiogenesis.
526 // N // 11-*epi*-geumsanol F // IA *vs* anti-angiogenesis.
527 // N // 11-*epi*-geumsanol B // IA *vs* anti-angiogenesis.



214 Ascomycota *Penicillium sclerotiorum* // (sponge, *Holoxea* sp.) Quanfu Is., Hainan, China // New azaphilones from the marine-derived fungus *Penicillium sclerotiorum* E23Y-1A with their anti-inflammatory and antitumor activities
528 // N // penicilazaphilone I // IA *vs* 5 HTCLs; IA *vs* NO prod.
529 // N // penicilazaphilone J // IA *vs* 5 HTCLs; IA *vs* NO prod.
530 // N // epi-geumsanol D // IA *vs* 5 HTCLs; IA *vs* NO prod.
531 // N // penidioxolane C // IA *vs* 5 HTCLs; IA *vs* NO prod.
532 // N // penidioxolane D // IA *vs* 5 HTCLs; IA *vs* NO prod.
524 // N // penicilazaphilone K // IA *vs* 5 HTCLs; IA *vs* NO prod.
525 // N // penicilazaphilone L // IA *vs* 5 HTCLs; IA *vs* NO prod.
533 // N // penicilazaphilone M // IA *vs* 5 HTCLs; IA *vs* NO prod.
534 // N // penicilazaphilone N // IA *vs* 5 HTCLs; IA *vs* NO prod.

215 Ascomycota *Penicillium steckii* // (green alga, *Botryocladia* sp.) Sanya County, Hainan Province, PR China // Tanzawaic acid derivatives from the marine-derived *Penicillium steckii* as inhibitors of RANKL-induced osteoclastogenesis
535 // N // steckwaic acid E // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
536 // N // steckwaic acid F // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
537 // N // steckwaic acid G // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
538 // N // steckwaic acid H // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
539 // N // steckwaic acid I // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
540 // N // steckwaic acid J // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
541 // N // steckwaic acid K // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.
542 // N // 13-(11-hydroxy-8-(4-hydroxy-1,6-dimethoxybenzyl)-9-methoxy-12-methylphenyl) propan-15-one // IA *vs* 4 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* anti-inflam.

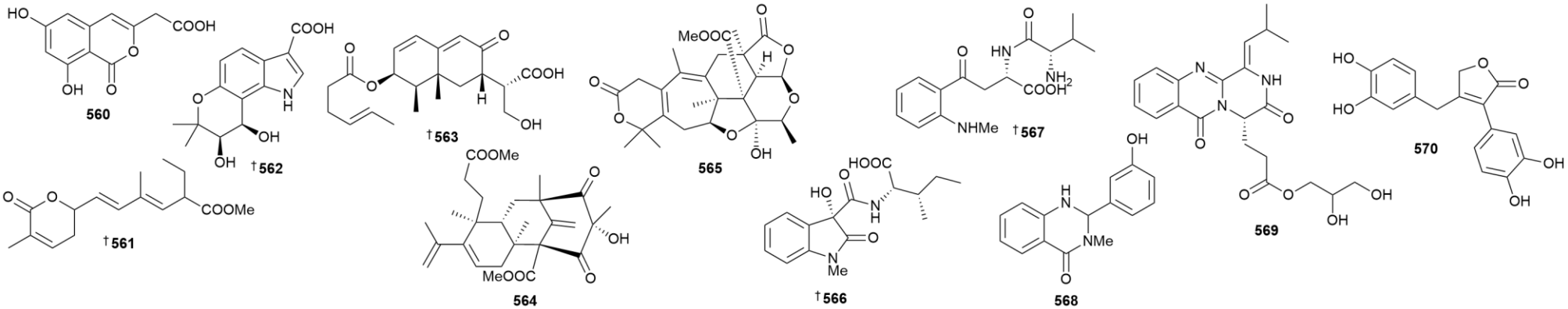


216 Ascomycota *Penicillium steckii* // (green alga, *Botryocladia* sp.) South China Sea // New fusarin derivatives from the marine algicolous fungus *Penicillium steckii* SCSIO41040
543 // N // steckfusarin A // IA *vs* 20 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* 2 lipases; IA *vs* 2 kinases; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* AChE.
544 // N // steckfusarin B // IA *vs* 20 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* 2 lipases; IA *vs* 2 kinases; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* AChE.
545 // N // steckfusarin C // IA *vs* 20 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* 2 lipases; IA *vs* 2 kinases; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* AChE.
546 // N // steckfusarin D // IA *vs* 20 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* 2 lipases; IA *vs* 2 kinases; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* AChE.
547 // N // steckfusarin E // IA *vs* 20 HTCLs; IA *vs* 2 bact. strains; IA *vs* 4 fungal strains; IA *vs* 2 lipases; IA *vs* 2 kinases; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* AChE.

217 Ascomycota *Penicillium* sp // (sediment) South China Sea // Sulfoxanthicillin from the deep-sea derived *Penicillium* sp. SCSIO sof101: an antimicrobial compound against gram-positive and -negative pathogens
548 // N // sulfoxanthocillin // weak to pot. activ. *vs* 27 bact. strains; IA to weak cytotox. *vs* 5 HTCLs.

218 Ascomycota *Penicillium* sp // (sediment) Eastern Pacific Ocean // Ferroptosis inhibitory compounds from the deep-sea-derived fungus *Penicillium* sp. MCCC 3A00126
549 // N // 11-O-acetylaspergillusone B // IA *vs* 1 HTCL.
550 // N // 7-dehydroxyhuperxanthone A // IA *vs* 1 HTCL.

219 Ascomycota *Penicillium* sp // (sediment) Kueishantao, Taiwan // Novel citrinin derivatives from fungus *Penicillium* sp. TW131-64 and their antimicrobial activities
551 // N // (5*R*)-isoquinocitrinin B // IA to pot. activ. *vs* 16 bact. strains; weak inhib. *vs* 2 fungal strains.
552 // N // (5*S*)-isoquinocitrinin B // IA to pot. activ. *vs* 16 bact. strains; weak inhib. *vs* 2 fungal strains.
553 // N // (5*R*)-isoquinocitrinin C // IA to mod. activ. *vs* 16 bact. strains; IA *vs* 2 fungal strains.
554 // N // (5*S*)-isoquinocitrinin C // IA to mod. activ. *vs* 16 bact. strains; IA *vs* 2 fungal strains.
555 // N // (5*R*)-isoquinocitrinin D // IA to mod. activ. *vs* 16 bact. strains; IA *vs* 2 fungal strains.
556 // N // (5*S*)-isoquinocitrinin D // IA to mod. activ. *vs* 16 bact. strains; IA *vs* 2 fungal strains.
557 // N // (3*R*,4*S*)-8-hydroxy-6-methoxy-3,4,5-trimethyl-isochromane-7-carboxylatemethyl // IA *vs* 16 bact. strains; IA *vs* 2 fungal strains.
558 // N // (3*R*,4*S*)-6-hydroxy-8-methoxy-3,4,5-trimethyl-isochromane-7-carboxylatemethyl // IA *vs* 16 bact. strains; IA *vs* 2 fungal strains.
559 // N // penicitrinone J // IA *vs* 16 bact. strains; IA *vs* 2 fungal strains.



220 Ascomycota *Penicillium* sp // (sediment) Mirs Bay, Shenzhen, China // Polyketides and Alkaloids from the Fungus *Penicillium* sp.
560 // N // peniketide A // IA *vs* α-glucosidase.
561 // N // methyl ester of penipyrol A // IA *vs* α-glucosidase.

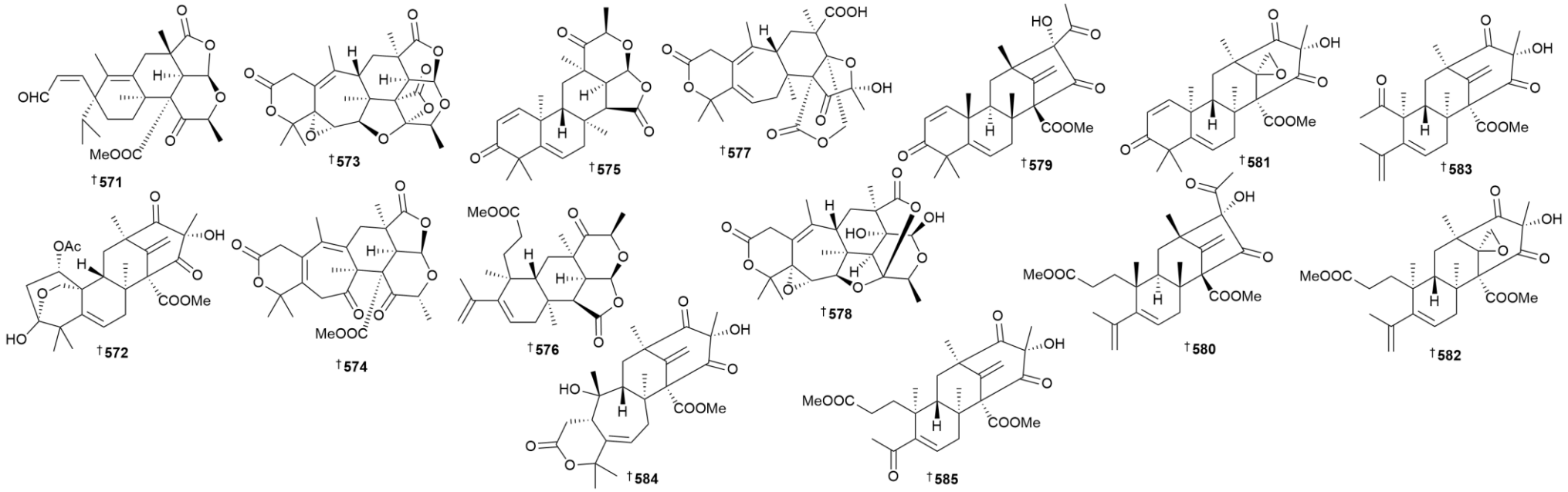
221 Ascomycota *Penicillium* sp // (sediment) Southwest Indian Ridge // Penindolacid A, a new indole alkaloid from the marine-derived fungus *Penicillium* sp.
562 // N // penindolacid // IA *vs* α-glucosidase; IA *vs* antioxid.

222 Ascomycota *Penicillium* sp // (sediment) Hangzhou Bay, China // Penicisepene, A new sesquiterpenoid from the fungus *Penicillium* sp. LPFH-Q3
563 // N // penicisepene // IA *vs* NO prod.

223 Ascomycota *Penicillium* sp // (sediment) Seosan bay, Chungnam, South Korea // New meroterpenoids from a soil-derived fungus *Penicillium* sp. SSW03M2 GY and their anti-virulence activity
564 // N // berkeleyone C methyl ester // weak activ. *vs* 1 bact. strain.
565 // N // *epi*-miniolutelide C // IA *vs* 1 bact. strain.

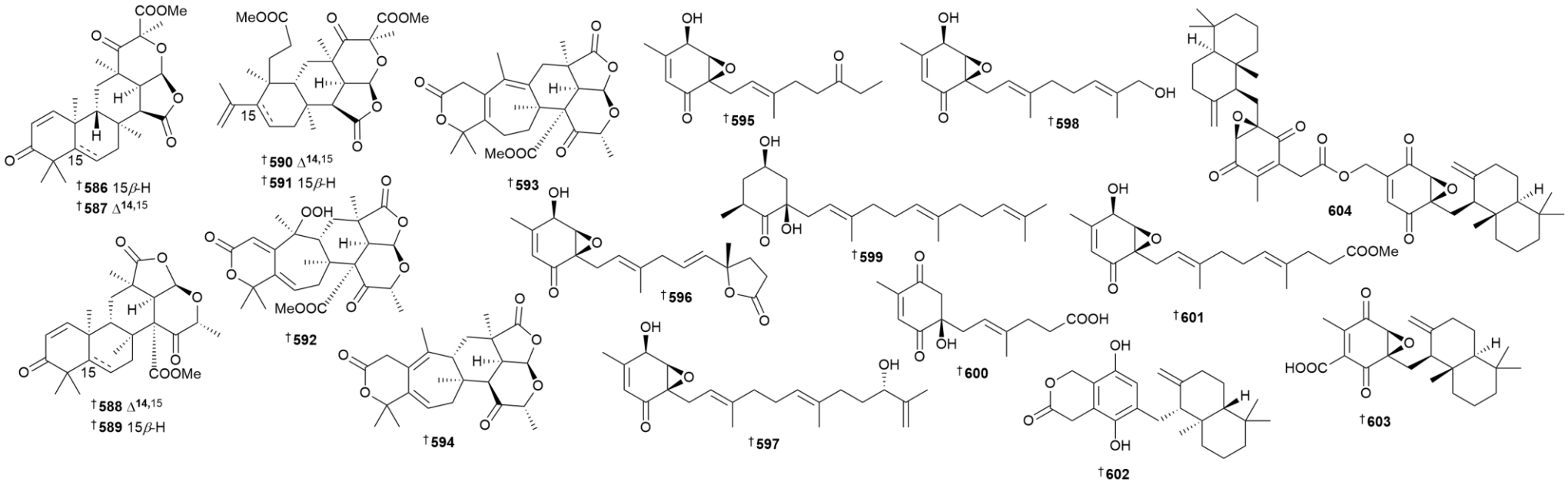
224 Ascomycota *Penicillium* sp // (unspecified soft coral) South China Sea // Two new linear peptides from the marine-derived fungus *Penicillium* sp. SCSIO 41512
566 // N // penicamide A // IA *vs* 4 fungal strains.
567 // N // penicamide B // IA *vs* 4 fungal strains.

225 Ascomycota *Penicillium* sp // (sponge, *Callyspongia* sp.) Weizhou Is., Beibu Gulf, South China Sea // Two new alkaloids and a new butenolide derivative from the Beibu Gulf sponge-derived fungus *Penicillium* sp. SCSIO 41413
568 // N // polonimide E // IA *vs* 14 bact. strains; IA *vs* 2 HTCLs; IA *vs* 2 kinases.
569 // N // polonimide D // IA *vs* 14 bact. strains; IA *vs* 2 HTCLs; IA *vs* 2 kinases.
570 // N // eutypoid F // IA *vs* 14 bact. strains; IA *vs* 2 HTCLs; IA to weak inhib. 2 kinases.



226 Ascomycota *Penicillium* sp // (mangrove root, *Lumnitzera littorea*) Sanya, Hainan Is, China // Meroterpenoids possessing diverse rearranged skeletons with anti-inflammatory activity from the mangrove-derived fungus *Penicillium* sp. HLLG -122

571 // N // littoreanoid A // IA *vs* anti-inflam.
572 // N // littoreanoid B // IA *vs* anti-inflam.
573 // N // littoreanoid C // IA *vs* anti-inflam.
574 // N // littoreanoid D // IA *vs* anti-inflam.
575 // N // littoreanoid E // IA *vs* anti-inflam.
576 // N // littoreanoid F // IA *vs* anti-inflam.
577 // N // littoreanoid G // IA *vs* anti-inflam.
578 // N // littoreanoid H // IA *vs* anti-inflam.
579 // N // littoreanoid I // IA *vs* anti-inflam.
580 // N // littoreanoid J // IA *vs* anti-inflam.
581 // N // littoreanoid K // IA *vs* anti-inflam.
582 // N // littoreanoid L // IA *vs* anti-inflam.
583 // N // littoreanoid M // IA *vs* anti-inflam.
584 // N // littoreanoid N // IA *vs* anti-inflam.
585 // N // littoreanoid O // IA *vs* anti-inflam.



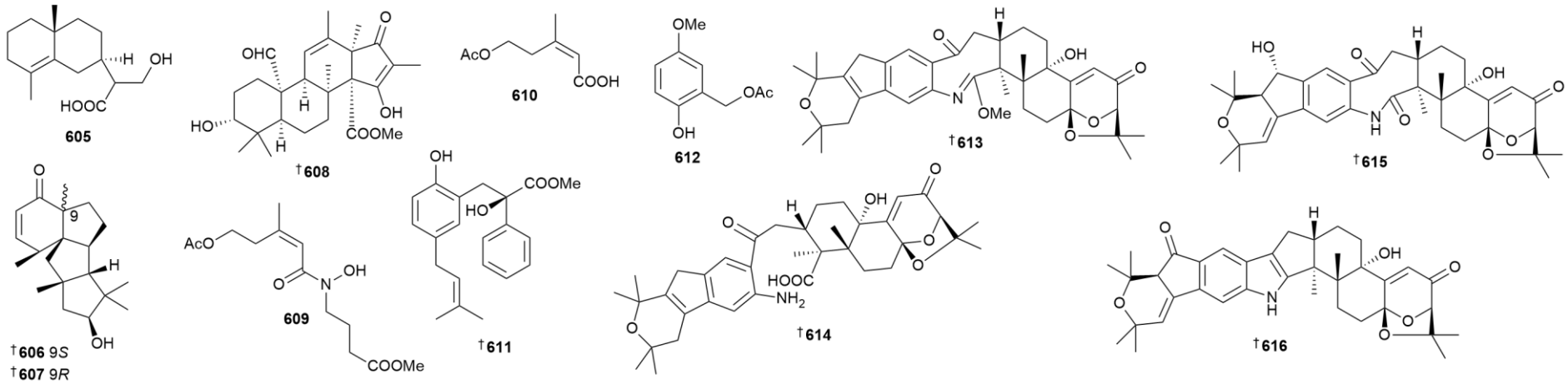
227 Ascomycota *Penicillium* sp // (mangrove root, *Lumnitzera littorea*) Sanya, Hainan Is., China // OSMAC strategy integrated with molecular networking discovery peniciacetals A−I, nine new meroterpenoids from the mangrove-derived fungus Penicillium sp. HLLG-122

586 // N // peniciacetal A // IA *vs* 2 HTCLs.
587 // N // peniciacetal B // IA *vs* 2 HTCLs.
588 // N // peniciacetal C // IA *vs* 2 HTCLs.
589 // N // peniciacetal D // IA *vs* 2 HTCLs.
590 // N // peniciacetal E // IA *vs* 2 HTCLs.
591 // N // peniciacetal F // IA *vs* 2 HTCLs.
592 // N // peniciacetal G // IA *vs* 2 HTCLs.
593 // N // peniciacetal H // IA *vs* 2 HTCLs.
594 // N // peniciacetal I // IA *vs* 2 HTCLs.

228 Ascomycota *Penicillium* sp // (mangrove sediment) Nansha Mangrove National Nature Reserve, Guangdong Province, China // Cyclohexenoneterpenes A−J: cytotoxic meroterpenoids from mangrove-associated fungus *Penicillium* sp. N-5

595 // N // cyclohexenoneterpene A // IA *vs* 4 HTCLs.
596 // N // cyclohexenoneterpene B // IA *vs* 4 HTCLs.
597 // N // cyclohexenoneterpene C // IA *vs* 4 HTCLs.
598 // N // cyclohexenoneterpene D // IA *vs* 4 HTCLs.

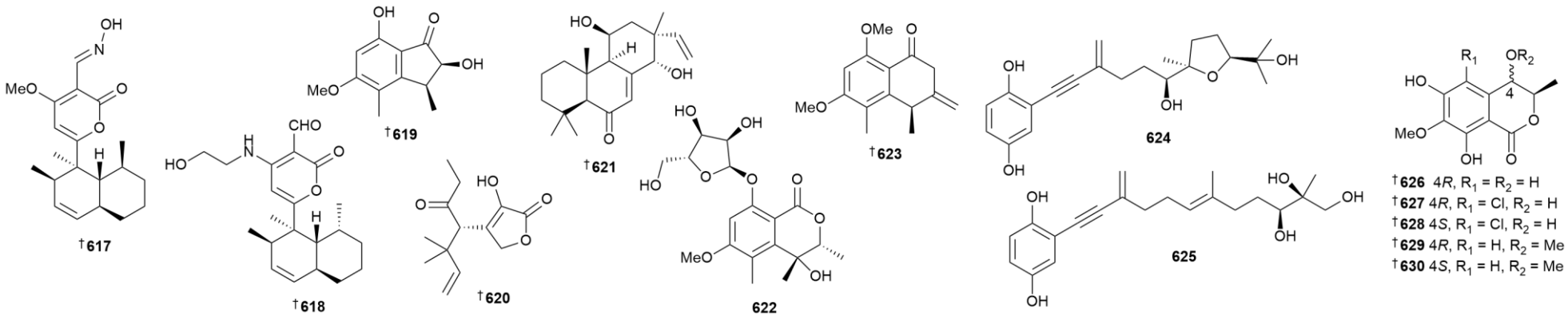
599 // N // cyclohexenoneterpene E // IA *vs* 4 HTCLs.
600 // N // cyclohexenoneterpene F // IA *vs* 4 HTCLs.
601 // N // cyclohexenoneterpene G // IA *vs* 4 HTCLs.
602 // N // cyclohexenoneterpene H // IA *vs* 4 HTCLs.
603 // N // cyclohexenoneterpene I // IA *vs* 4 HTCLs.
604 // N // cyclohexenoneterpene J // IA to weak activ. *vs* 4 HTCLs.



229 Ascomycota *Penicillium* sp // (mangrove sediment) Dong Zhai Gang mangrove reserve, Hainan Is., China // A new eudesmane sesquiterpenoid from the marine-derived fungus *Penicillium* sp. HK1-22
605 // N // artemihedinic acid N // IA *vs* 7 bact. strains.

230 Ascomycota *Penicillium oxalicum* // (mangrove root, *Lumnitzera littorea*) Tielugang Mangrove Reserve, Sanya city, Hainan province, China // Biological secondary metabolites from the *Lumnitzera littorea*-derived fungus *Penicillium oxalicum* HLLG-13
606 // N // conidiogenone J // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae
607 // N // conidiogene K // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae
608 // N // andrastin H // IA to weak activ. *vs* 7 bact. strains; weak activ. *vs* 1 fungal strain; IA *vs* insect larvae
609 // N // (*Z*)-4-(5-acetoxy-*N*-hydroxy-3-methylpent-2-enamido) butanoate // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae
610 // N // (*Z*)-5-acetoxy-3-methylpent-2-enoic acid // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae
611 // R // methyl 2*R*-stocksiloate // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae
612 // M // (2-hydroxy-5-methoxyphenyl) methyl acetate // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* insect larvae

231 Ascomycota *Penicillium* sp // (mangrove sediment) Dongzhai harbour, Hainan province, China // Indole diterpenes from mangrove sediment-derived fungus *Penicillium* sp. UJNMF0740 protect PC12 cells against 6-OHDA-induced neurotoxicity *via* regulating the PI3K/Akt pathway
613 // N // shearinine R // no neuroprotective effect.
614 // N // shearinine S // no neuroprotective effect.
615 // N // 22-hydroxyshearinine I // no neuroprotective effect.
616 // N // shearinine T // no neuroprotective effect.

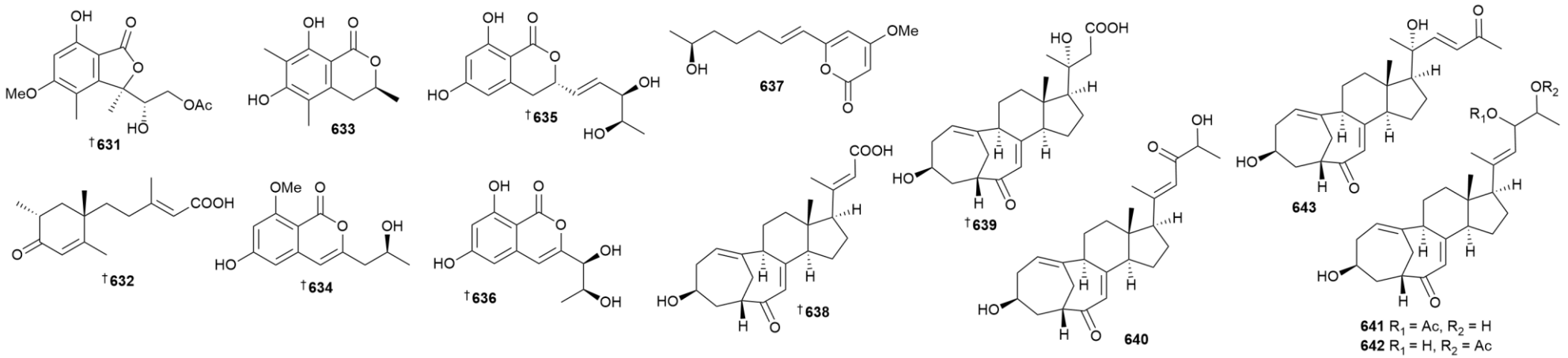


232 Ascomycota *Peroneutypa* sp // (unspecified sea cucumber) Guarapari, Espírito Santostate, Brazil // Polyketide- and terpenoid-derived metabolites produced by a marine-derived fungus, *Peroneutypa* sp.
617 // N // (−)-(*E*)-(1*R*,2*R*,5*S*,9*S*,10*R*)-solanapyrone S // IA *vs* 1 HTCL; IA *vs P. falciparum*.
618 // N // (−)-(1*R*,2*R*,5*S*,9*R*,10*R*)-solanapyrone T // IA *vs* 1 HTCL; IA *vs P. falciparum*.
619 // N // (+)-(1*S*,9*S*)-peroneutone // IA *vs* 1 HTCL; IA *vs P. falciparum*.
620 // N // (+)-(*S*)-perofuranone // IA *vs* 1 HTCL; IA *vs P. falciparum*.
621 // N // (+)-(5*S*,9*R*,10*R*,11*S*,13*R*,14*S*)-peronepene // IA *vs* 1 HTCL; IA *vs P. falciparum*.
622 // N // (+)-(3*R*,4*R*)-8-*O*-α-ribofuranosyl-3,4-dihydro-3-methyl-4-hydroxy-6-methoxy-1*H*-2-benzopyran-1-one // IA *vs* 1 HTCL; IA *vs P. falciparum*.
623 // M/R //*// IA *vs* 1 HTCL; IA *vs P. falciparum*.

234 Ascomycota *Pestalotiopsis diploclisia* // (unidentified alga) Chanthaburi province, Thailand // Two new farnesyl hydroquinones from *Pestalotiopsis diploclisia* (BCC 35283), the fungus associated with algae
624 // N // pestalotioquinol G // IA *vs* 1 NHCL; IA *vs* 2 bact. strains; IA *vs* 2 fungal strains; IA *vs P. falciparum*.
625 // N // pestalotioquinol H // IA *vs* 1 NHCL; IA *vs* 2 bact. strains; IA *vs* 2 fungal strains; IA *vs P. falciparum*.

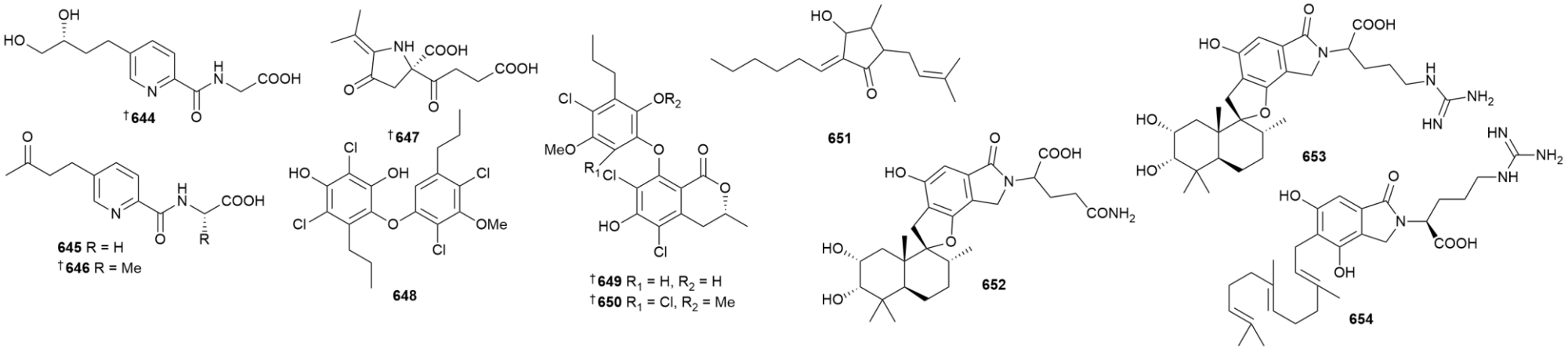
235 Ascomycota *Phaeosphaeriopsis* sp // (mollusc, *Strombus luhuanus*) Yagong Is., Xisha Is., China // New isocoumarins from the marine fungus *Phaeosphaeriopsis* sp. WP-26
626 // N // phaeosphaerin A // IA *vs* 5 HTCLs; weak neuroprotective effect.
627 // N // phaeosphaerin B // IA *vs* 5 HTCLs; weak neuroprotective effect.
628 // N // phaeosphaerin C // IA *vs* 5 HTCLs; weak neuroprotective effect.
629 // N // phaeosphaerin D // IA *vs* 5 HTCLs; no neuroprotective effect.
630 // N // phaeosphaerin E // IA *vs* 5 HTCLs; weak neuroprotective effect.

236 Ascomycota *Phoma* sp // (sediment) West Pacific Ocean // New polyketides and sesquiterpenoids from the deep-sea sulphide-derived fungus *Phoma* sp. 3A00413
631 // N // (*S*)-2-hydroxy-2-((*R*)-4-hydroxy-6-methoxy-1,7-dimethyl-3-oxo-1,3-dihydroisobenzofuran-1-yl)ethyl acetate // IA *vs* 6 bact. strains.
632 // N // (*E*)-3-methyl-5-((1*S*,5*R*)-1,2,5-trimethyl-4-oxocyclohex-2-en-1-yl)pent-2-enoic acid // IA *vs* 6 bact. strains.
633 // N // (*S*)-6,8-dihydroxy-3,5,7-trimethylisochroman-1-one // IA to mod. activ. *vs* 6 bact. strains.



237 Ascomycota *Phomopsis* sp // (mangrove root, *Rhizophora mangle*) Dong Zhai Gang mangrove reserve, Hainan Is., China // New isocoumarin and pyrone derivatives from the Chinese mangrove plant *Rhizophora mangle*-associated fungus *Phomopsis* sp. DHS-11
634 // N // (*S*)-6-hydroxy-3-(2-hydroxypropyl)-8-methoxy-1*H*-isochromen-1-one // IA *vs* 2 HTCLs.
635 // N // (*S*)-3-((3*R*,4*R*,*E*)-3,4-dihydroxypent-1-en-1-yl)-6,8-dihydroxyisochroman-1-one // NT.
636 // N // 3-((1*S*,2*S*)-1,2-dihydroxypropyl)-6,8-dihydroxy-1*H*-isochromen-1-one // IA to weak activ. *vs* 2 HTCLs.
637 // N // (*S*,*E*)-6-(6-hydroxyhept-1-en-1-yl)-4-methoxy-2*H*-pyran-2-one // IA *vs* 2 HTCLs.

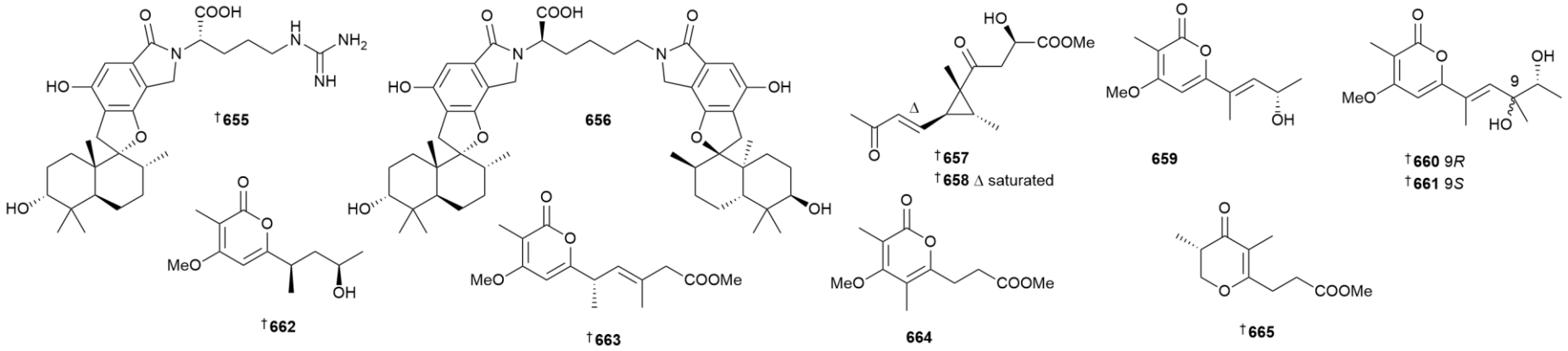
238 Mucoromycota *Rhizopus* sp // (sediment) West Pacific Ocean // Tetracyclic steroids bearing a bicyclo[4.4.1] ring system as potent antiosteoporosis agents from the deep-sea-derived fungus *Rhizopus* sp. W23
638 // N // norcyclocitrinoic acid A // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.
639 // N // norcyclocitrinoic acid B // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.
640 // N // 23-oxoneocyclocitrinol // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.
641 // N // threo-23-*O*-acetylneocyclocitrinol // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.
642 // N // erythro-23-*O*-acetylneocyclocitrinol // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.
643 // N // (20*S*)-24-oxocyclocitrinol // IA *vs* 18 HTCLs; IA *vs* antiosteoporosis.



239 Ascomycota *Samsoniella hepiali* // (sediment) South Atlantic Ocean // Hepialiamides A–C: aminated fusaric acid derivatives and related metabolites with anti-inflammatory activity from the deep-sea-derived fungus *Samsoniella hepiali* W7
644 // N // hepialiamide A // IA *vs* NO prod.
645 // N // hepialiamide B // IA *vs* NO prod.
646 // N // hepialiamide C // IA *vs* NO prod.
647 // N // hepialide // IA *vs* NO prod.

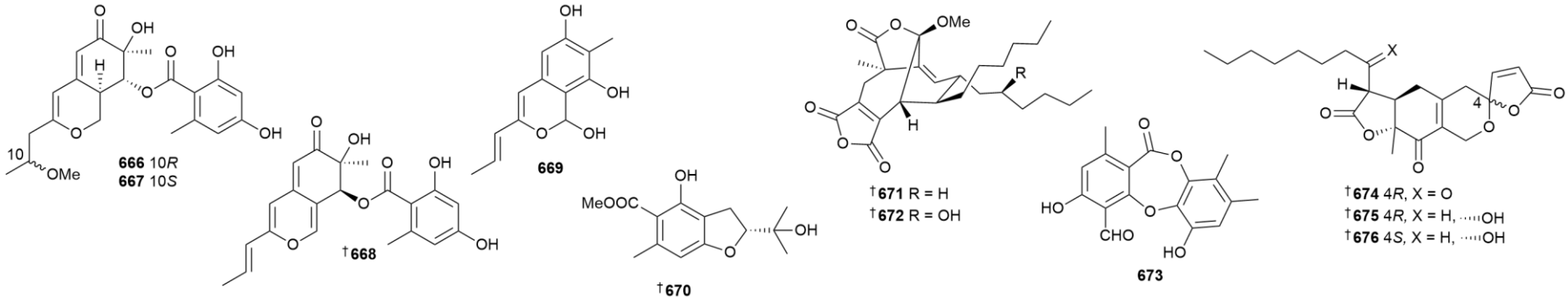
240 Ascomycota *Spiromastix* sp // (sediment) Northern South China Sea // Antimicrobial polyketides from the marine-derived fungus *Spiromastix* sp. SCSIO F190
648 // N // spiromastol L // mod. to pot. activ. *vs* 21 bact. strains; IA *vs* 6 HTCLs.
649 // N // spiromastol M // weak to mod. activ. *vs* 21 bact. strains; IA *vs* 6 HTCLs.
650 // N // spiromastol N // weak to mod. activ. *vs* 21 bact. strains; IA *vs* 6 HTCLs.
651 // N // spiromastixin // IA *vs* 21 bact. strains; IA *vs* 6 HTCLs.

241 Ascomycota *Stachybotrys* sp // (mollusc, conch) Yantai City, Shandong Province, China // Three new phenylspirodrimanes from a conch-derived fungus *Stachybotrys* sp. NF02434
652 // N // 5-amino-5-oxo-2-((2*R*,2'*R*,4a'*S*,6'*S*,7'*R*,8a'*S*)-4,6',7'-trihydroxy-2',5',5',8a'-tetramethyl-6-oxo-3',4',4a',5',6,6',7',8,8',8a'-decahydro-2'H-spiro[furo[2,3-e]isoindole-2,1'-naphthalen]-7(3*H*)-yl)pentanoic acid // NT.
653 // N // 5-guanidino-2-((2*R*,2'*R*,4a'*S*,6'*S*,7'*R*,8a'*S*)-4,6',7'-trihydroxy-2',5',5',8a'-tetramethyl-6-oxo-3',4',4a',5',6,6',7',8,8',8a'-decahydro-2'*H*-spiro[furo[2,3-e]isoindole-2,1'-naphthalen]-7(3*H*)-yl)pentanoic acid // NT.
654 // N // (*S*)-2-(4,6-dihydroxy-1-oxo-5-((2*E*,6*E*)-3,7,11-trimethyldodeca-2,6,10-trien-1-yl)isoindolin-2-yl)-5-guanidinopentanoic acid // NT.



242 Ascomycota *Stachybotrys chartarum* // (sponge, *Aplysina cavernicola*) Villefranche-sur-Mer, France // New phenylspirodrimanes from the sponge-associated fungus *Stachybotrys chartarum* MUT 3308
655 // N // stachybotrin J // IA *vs* 5 HTCLs.
656 // N // stachybocin G // IA *vs* 5 HTCLs.

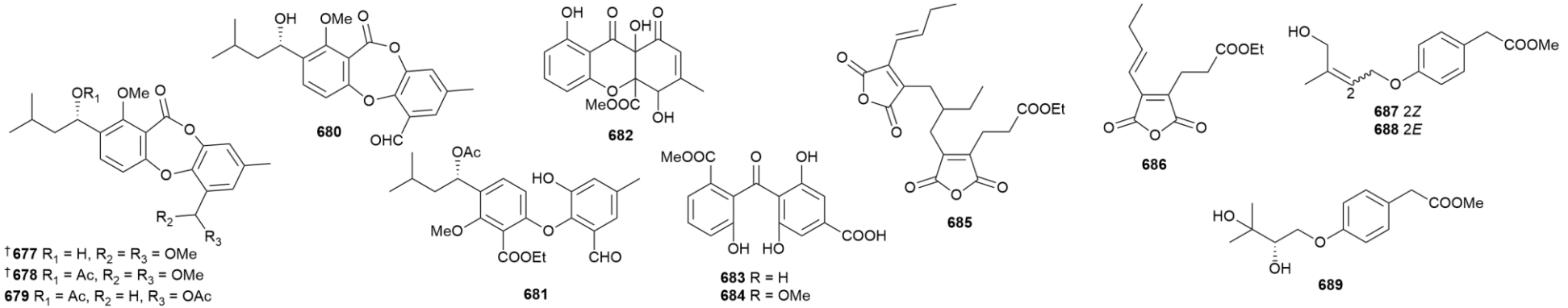
243 Ascomycota *Stagonospora* sp // (unspecified sponge) North reef of Paracel Is., China // Absolute configuration of cyclopropanes and the structural revision of pyrones from marine-derived fungus *Stagonospora* sp. SYSU-MS7888
657 // N // stagonospone A // weak inhib. NO prod.; IA *vs* 1 HTCL.
658 // N // stagonospone B // weak inhib. NO prod.; IA *vs* 1 HTCL.
659 // N // stapyrone A // NT.
660 // N // stapyrone B // IA *vs* NO prod.; IA *vs* 1 HTCL.
661 // N // stapyrone C // IA *vs* NO prod.; IA *vs* 1 HTCL.
662 // N // stapyrone D // IA *vs* NO prod.; IA *vs* 1 HTCL.
663 // N // stapyrone E // IA *vs* NO prod.; IA *vs* 1 HTCL.
664 // N // stapyrone F // NT.
665 // N // stapyrone G // IA *vs* NO prod.; IA *vs* 1 HTCL.



244 Ascomycota *Talaromyces indigoticus* // (sediment) South China Sea // Molecular networking-based discovery of new polyketides from the deep-sea-derived fungus *Talaromyces indigoticus* FS688
666 // N // (7*S*,8*R*,8a*R*)-7-hydroxy-3-((*R*)-2-methoxypropyl)-7-methyl-6-oxo-6,7,8,8a-tetrahydro-1*H*-isochromen-8-yl 2,4-dihydroxy-6-methylbenzoate // IA *vs* 4 HTCLs; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* α-glucosidase; IA *vs* unspecified microbes.
667 // N // (7*S*,8*R*,8a*R*)-7-hydroxy-3-((*S*)-2-methoxypropyl)-7-methyl-6-oxo-6,7,8,8a-tetrahydro-1*H*-isochromen-8-yl 2,4-dihydroxy-6-methylbenzoate // IA *vs* 4 HTCLs; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* α-glucosidase; IA *vs* unspecified microbes.
668 // N // (7*S*,8*S*)-7-hydroxy-7-methyl-6-oxo-3-((*E*)-prop-1-en-1-yl)-7,8-dihydro-6*H*-isochromen-8-yl 2,4-dihydroxy-6-methylbenzoate // IA *vs* 4 HTCLs; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* α-glucosidase; IA *vs* unspecified microbes.
669 // N // (*E*)-7-methyl-3-(prop-1-en-1-yl)-1*H*-isochromene-1,6,8-triol // IA *vs* 4 HTCLs; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* α-glucosidase; IA *vs* unspecified microbes.
670 // N // methyl (*R*)-4-hydroxy-2-(2-hydroxypropan-2-yl)-6-methyl-2,3-dihydrobenzofuran-5-carboxylate // IA *vs* 4 HTCLs; IA *vs* antioxid.; IA *vs* NO prod.; IA *vs* α-glucosidase; IA *vs* unspecified microbes.

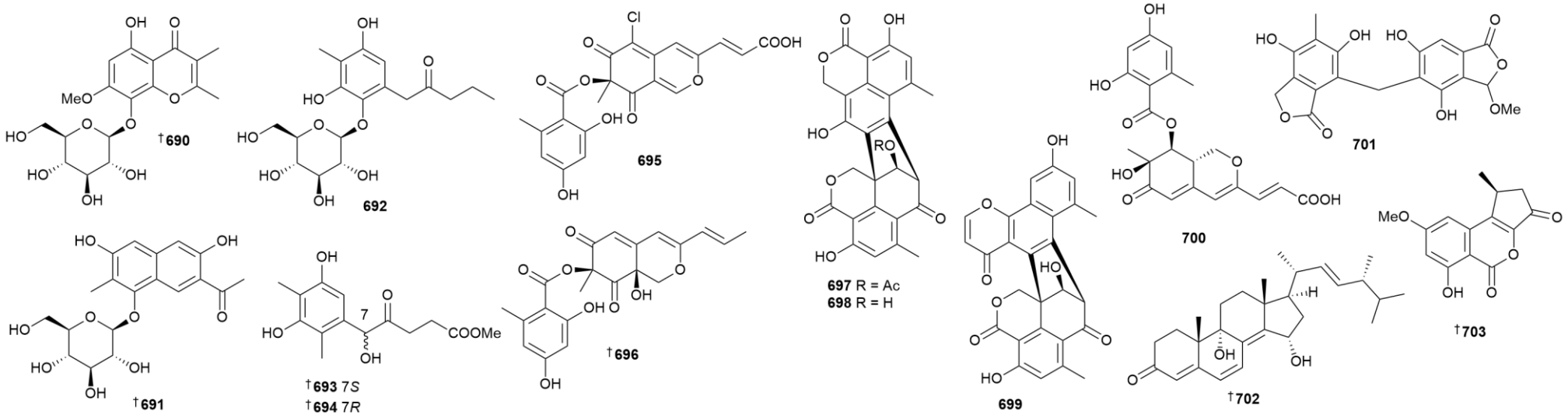
245 Ascomycota *Talaromyces scorteus* // (sea anemone, *Cerianthus* sp.) Magellan Seamount // Antimicrobial polyketides from Magellan Seamount-derived fungus *Talaromyces scorteus* AS-242
671 // N // talarodride G // IA to pot. activ. *vs* 12 fungal strains; IA to weak activ. *vs* 7 bact. strains.
672 // N // talarodride H // IA to pot. activ. *vs* 12 fungal strains; IA to weak activ. *vs* 7 bact. strains.
673 // N // botryorhodine C // IA to pot. activ. *vs* 12 fungal strains; IA to mod. activ. *vs* 7 bact. strains.

246 Ascomycota *Talaromyces* sp // (red alga, *Grateloupia filicina*) Zhoushan, Zhejiang province, China // Spirocyclic polyketides from the marine fungus *Talaromyces* sp. CX11
674 // N // talaromyacin B // IA *vs* 12 HTCLs; IA *vs* 4 bact. strains; IA *vs* 1 virus strain.
675 // N // talaromyacin C // IA *vs* 12 HTCLs; IA *vs* 4 bact. strains; IA *vs* 1 virus strain.
676 // N // talaromyacin A // IA *vs* 12 HTCLs; IA *vs* 4 bact. strains; IA *vs* 1 virus strain.



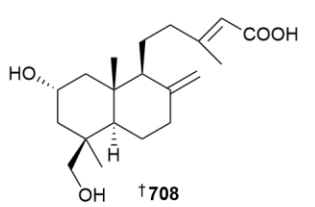
247 Ascomycota *Talaromyces* sp // (mangrove sediment) Yalog Bay, at Sanya, Haian, China // Polyketides with potential bioactivities from the mangrove-derived fungus *Talaromyces* sp. WHUF0362
677 // N // talaronin A // IA *vs* 10 bact. strains.
678 // N // talaronin B // IA *vs* 10 bact. strains.
679 // N // talaronin C // IA *vs* 10 bact. strains.
680 // N // talaronin D // IA *vs* 10 bact. strains.
681 // N // talaronin E // IA *vs* 10 bact. strains.
682 // N // talaronin F // IA *vs* 10 bact. strains.
683 // N // talaronin G // IA *vs* 10 bact. strains.
684 // N // talaronin H // IA *vs* 10 bact. strains.

248 Ascomycota *Talaromyces* sp, *Penicillium* sp // (mangrove sediment) Gaoqiao mangrove wetland, Zhanjiang, Beibu Gulf, China // Bioactive polyketides and benzene derivatives from two mangrove sediment-derived fungi in the Beibu Gulf
685 // N // cordyanhydride A ethyl ester // IA *vs* 4 HTCLs; IA *vs* 5 bact. strains; IA to mod. activ. *vs* 5 fungal strains; IA *vs* anti-inflam.; IA *vs* AChE.
686 // M // maleicanhydridane // IA vs 4 HTCLs; IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* anti-inflam.
687 // N // stachyline H // IA vs 4 HTCLs; IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* anti-inflam.
688 // N // stachyline I // IA vs 4 HTCLs; IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* anti-inflam.
689 // N // stachyline J // IA vs 4 HTCLs; IA *vs* 5 bact. strains; IA *vs* 5 fungal strains; IA *vs* anti-inflam.

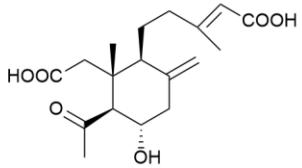


249 Ascomycota *Talaromyces minioluteus* // (sediment) South China Sea // Antimicrobial polyketides and sesquiterpene lactones from the deep-sea cold-seep-derived fungus *Talaromyces minioluteus* CS-113 triggered by the histone deacetylase inhibitor SAHA
690 // N // talaminioside A // IA to weak activ. *vs* 14 fungal strains.
691 // N // talaminioside B // IA to mod. activ. *vs* 14 fungal strains.
692 // N // talaminioside C // IA to mod. activ. *vs* 14 fungal strains.
693 // N // (+)-talaminone A // IA to mod. activ. *vs* 14 fungal strains.
694 // N // (−)-talaminone A // IA to mod. activ. *vs* 14 fungal strains.
695 // N // (+)-5-chloromitorubrinic acid // IA to weak activ. *vs* 14 fungal strains.
696 // N // 7-*epi*-purpurquinone C // IA to mod. activ. *vs* 14 fungal strains.

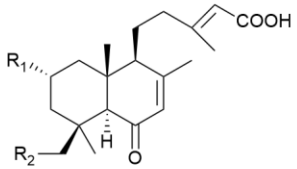
250 Ascomycota *Talaromyces pinophilus* // (sponge, *Mycale* sp.) Samaesan Is., Chonburi Province, Thailand // New hybrid phenalenone dimer, highly conjugated dihydroxylated C28 steroid and azaphilone from the culture extract of a marine sponge-associated fungus, *Talaromyces pinophilus* KUFA 1767
697 // M // bacillisporin A // IA to mod. activ. *vs* 7 bact. strains.
698 // M // bacillisporin B // IA to mod. activ. *vs* 7 bact. strains.
699 // N // talaropinophilone // NT.
700 // N // 7-*epi*-pinazaphilone B // IA *vs* 7 bact. strains.
701 // N // talaropinophilide // IA *vs* 7 bact. strains.
702 // N // 9*R*,15*S*-dihydroxy-ergosta-4,6,8 (14)-tetraen-3-one // IA *vs* 7 bact. strains.
703 // R // 1-deoxyrubralactone // IA *vs* 7 bact. strains.



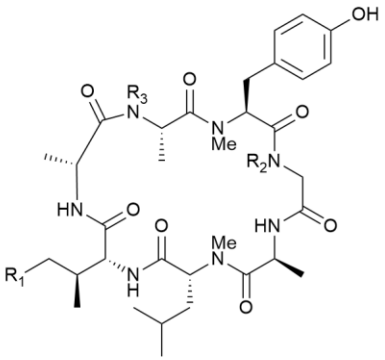
†**708**



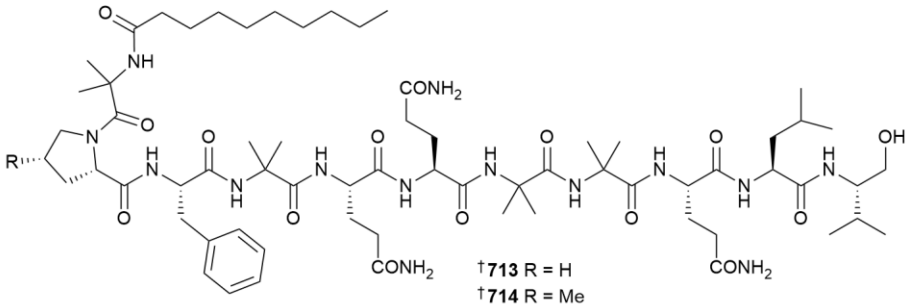
†**709**



†**710** R_1 = OH, R_2 = H
†**711** R_1 = H, R_2 = OH
†**712** R_1 = R_2 = OH



†**704** R_1 = R_3 = Me, R_2 = OH
†**705** R_1 = R_3 = Me, R_2 = H
706 R_1 = H, R_2 = OH, R_3 = Me
707 R_1 = Me, R_2 = OH, R_3 = H

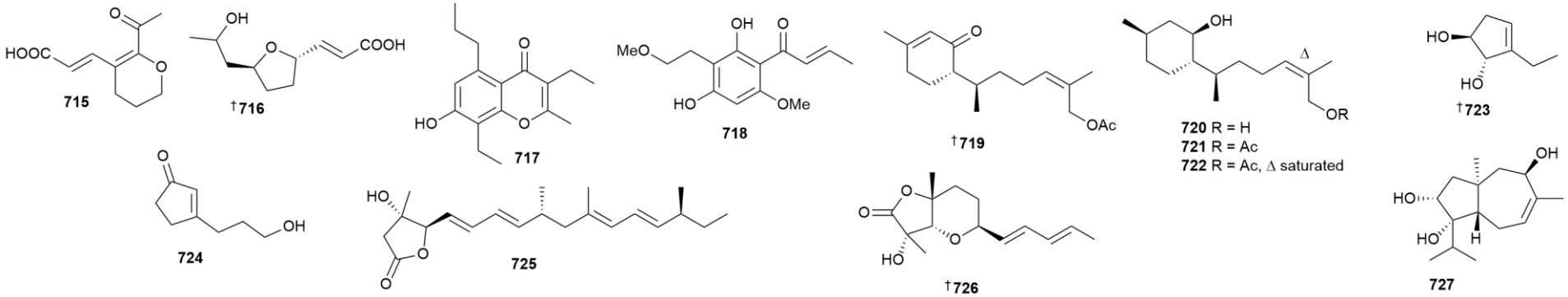


†**713** R = H
†**714** R = Me

251 Ascomycota *Talaromyces* sp // (unidentified tunicate) Tweed Heads, New South Wales, Australia, // Talarolides revisited: cyclic heptapeptides from an Australian marine tunicate-associated fungus, *Talaromyces* sp. CMB-TU011
704 // R // talarolide A // NT.
705 // N // talarolide B // NT.
706 // N // talarolide C // NT.
707 // N // talarolide D // NT.

252 Ascomycota *Talaromyces* sp // (unidentified sponge) Prydz Bay, Antarctica // Extending the structural diversity of labdane diterpenoids from marine-derived fungus *Talaromyces* sp. HDN151403 using heterologous expression
708 // N // talarobicin A // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
709 // N // talarobicin B // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
710 // N // talarobicin C // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
711 // N // talarobicin D // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.
712 // N // talarobicin E // IA *vs* 5 HTCLs; IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.

253 Ascomycota *Tolypocladium* sp // (green alga, *Spongomorpha arcta*) Green's Point, L'Etete, New Brunswick, Canada // Tolypocaibols: antibacterial lipopeptaibols from a *Tolypocladium* sp. endophyte of the marine macroalga *Spongomorpha arcta*
713 // N // tolypocaibol A // IA to mod. activ. *vs* 19 bact. strains.
714 // N // tolypocaibol B // IA to mod. activ. *vs* 19 bact. strains.



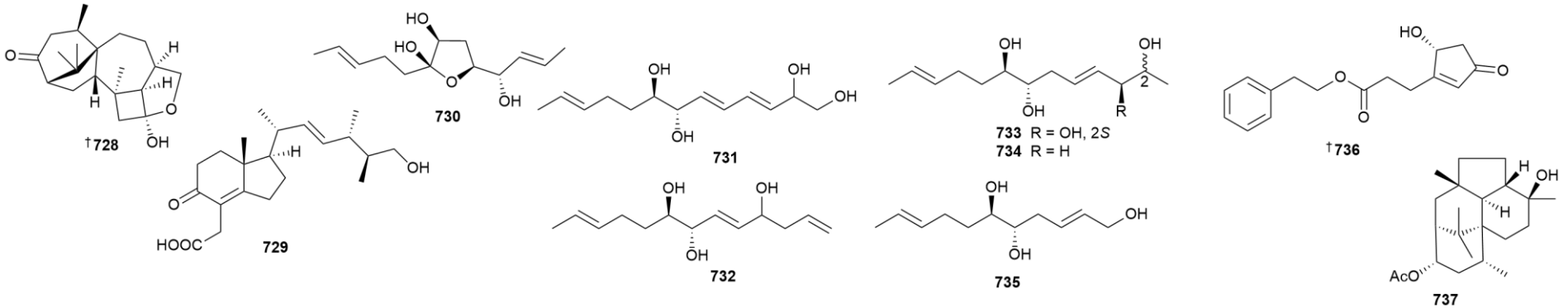
254 Ascomycota *Trichobotrys effusus*, *Trichobotrys effuse* // (sediment) South China Sea // Anti-Inflammatory phomalones from the deep-sea-derived fungus *Trichobotrys effuse* FS522
715 // N // tricholichenone A // IA *vs* NO prod.
716 // N // tricholichenone B // IA *vs* NO prod.
717 // N // tricholichenone C // IA *vs* NO prod.
718 // N // tricholichenone D // IA *vs* NO prod.

255 Ascomycota *Trichoderma asperellum* // (red alga, *Palisada papillosa*) Hainan, China // Bisabolane sesquiterpene and cyclopentene derivatives from the marine algal-derived endophytic fungus *Trichoderma asperellum* EN-764
719 // N // (*Z*)-12-acetoxybisabol-1-one // IA to mod. activ. *vs* 10 bact. strains.
720 // N // bisabolen-1,12-diol // IA to weak activ. *vs* 10 bact. strains.
721 // N // 12-acetoxybisabolen-1-ol // IA to weak activ. *vs* 10 bact. strains.
722 // N // 12-*nor*-11-acetoxybisabolan-1-ol // IA to mod. activ. *vs* 10 bact. strains.
723 // N // 3-ethylcyclopent-3-ene-1,2-diol // IA to mod. activ. *vs* 10 bact. strains.
724 // N // 3-(3-hydroxypropyl)cyclopent-2-en-1-one // IA to weak activ. *vs* 10 bact. strains.

256 Ascomycota *Trichoderma atroviride* // (brown alga, *Sargassum thunbergii*) Qingdao, China // Trichonafurin A: a new γ-lactone compound from the marine-derived fungus *Trichoderma atroviride* ZW-7
725 // N // trichonafurin A // IA *vs* 4 HTCLs.

257 Ascomycota *Trichoderma reesei* // (*Sargassum* sp.) Zhoushan Is., China // Sorbicillinoids from the alga-epiphytic fungus *Trichoderma reesei* Z56-8
726 // N // trichoreesin A // weak to mod. inhib. 3 phytoplankton; IA *vs* 4 bact. strains.

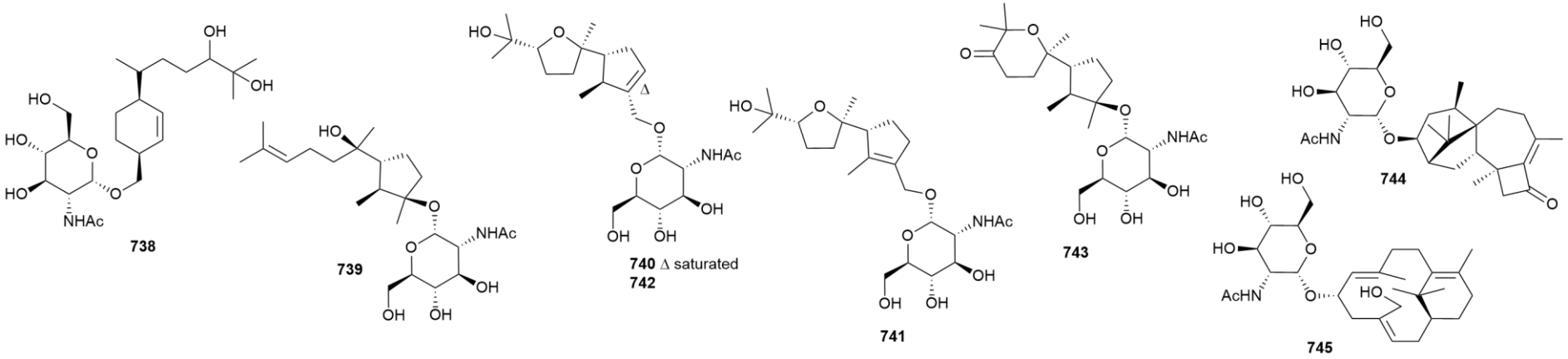
258 Ascomycota *Trichoderma virens* // (red alga, *Chondrus ocellatus*) Qingdao, China // Trichocarotin N: a new carotane sesquiterpene from the marine-derived fungus *Trichoderma virens* QD-11
727 // N // trichocarotin N // IA *vs* 4 HTCLs.



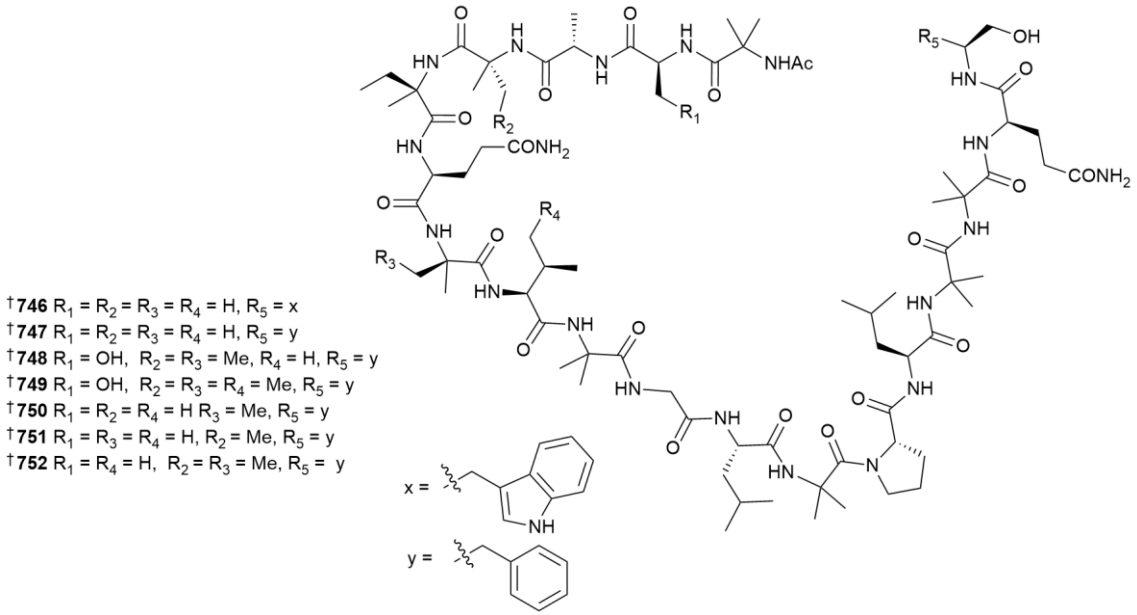
259 Ascomycota *Trichoderma* sp // (brown alga, *Dictyopteris divaricata*) Zhoushan, China // A new harziane diterpene, harziaketal A, and a new sterol, trichosterol A, from the marine-alga-epiphytic *Trichoderma s*p. Z43
728 // N // harziaketal A // IA to weak activ. *vs* 4 phtyoplankton.
729 // N // trichosterol A // IA to weak activ. *vs* 4 phtyoplankton.

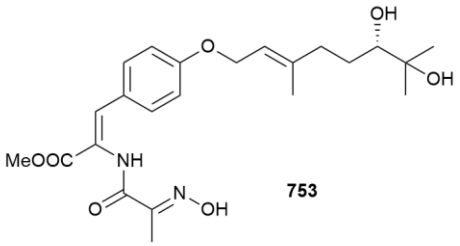
260 Ascomycota *Trichoderma* sp // (brown alga, *Dictyopteris divaricata*) Zhoushan, China // Trichoderols B-G, six new lipids from the marine algicolous fungus *Trichoderma* sp. Z43
730 // N // trichoderol B // IA *vs* 3 fungal strains; weak activ. *vs* 4 phytoplankton; IA *vs* brine shrimp.
731 // N // trichoderol C // IA *vs* 3 fungal strains; IA *vs* 4 phytoplankton; IA *vs* brine shrimp.
732 // N // trichoderol D // IA *vs* 3 fungal strains; weak activ. *vs* 4 phytoplankton; IA *vs* brine shrimp.
733 // N // trichoderol E // IA *vs* 3 fungal strains; IA *vs* 4 phytoplankton; IA *vs* brine shrimp.
734 // N // trichoderol F // IA *vs* 3 fungal strains; IA *vs* 4 phytoplankton; IA *vs* brine shrimp.
735 // N // trichoderol G // IA *vs* 3 fungal strains; IA *vs* 4 phytoplankton; IA *vs* brine shrimp.

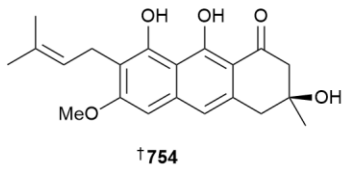
261 Ascomycota *Trichoderma atroviride* // (red alga, *Gracilaria verrusosa*) Yantai, China // Cyclopentenone and wickerol derivatives from the marine algicolous fungus *Trichoderma atroviride* A-YMD-9-4
736 // N // 4-hydroxyhypocrenone // IA *vs* 5 bact. strains; IA *vs* 4 phytplankton.
737 // N // 8-acetoxywickerol A // IA *vs* 5 bact. strains; IA *vs* 4 phytplankton.



262 Ascomycota *Trichoderma* sp // (sediment) unspecified location // Novel sesquiterpene and diterpene aminoglycosides from the deep-sea-sediment fungus *Trichoderma* sp. SCSIOW21
738 // N // trichaspside F // IA *vs* 3 fungal strains; IA *vs* NO prod.
739 // N // cycloneroside A // IA *vs* 3 fungal strains; IA *vs* NO prod.
740 // N // cycloneroside B // IA *vs* 3 fungal strains; IA *vs* NO prod.
741 // N // cycloneroside C // IA *vs* 3 fungal strains; IA *vs* NO prod.
742 // N // cycloneroside D // IA *vs* 3 fungal strains; IA *vs* NO prod.
743 // N // cycloneroside E // IA *vs* 3 fungal strains; IA *vs* NO prod.
744 // N // harzianoside A // IA *vs* 3 fungal strains; IA *vs* NO prod.
745 // N // harzianoside B // IA *vs* 3 fungal strains; IA *vs* NO prod.



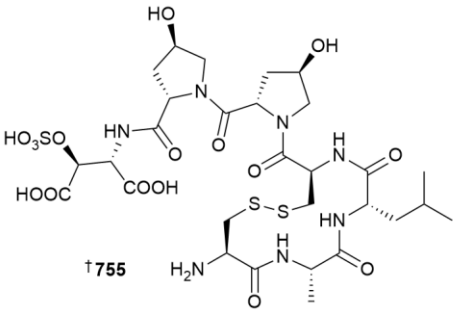




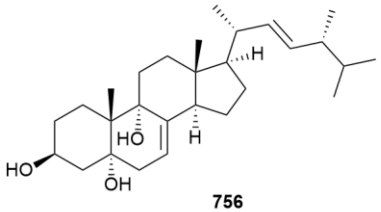
263 Ascomycota *Trichoderma* sp // (sponge, *Haliclona* sp.) Beibu Gulf, Guangxi, China // 18-Residue peptaibols produced by the sponge-derived *Trichoderma* sp. GXIMD 01001
746 // N // trichorzin A // weak to mod. cytotox. *vs* 4 HTCLs; IA to weak activ. *vs* 3 bact. strains.
747 // N // trichorzin B // weak to mod. cytotox. *vs* 4 HTCLs; IA. *vs* 3 bact. strains.
748 // N // trichorzin C // weak to mod. cytotox. *vs* 4 HTCLs; IA to weak activ. *vs* 3 bact. strains.
749 // N // trichorzin D // weak to mod. cytotox. *vs* 4 HTCLs; IA *vs* 3 bact. strains.
750 // N // trichorzin E // weak to mod. cytotox. *vs* 4 HTCLs; IA to weak activ. *vs* 3 bact. strains.
751 // N // trichorzin F // weak to mod. cytotox. *vs* 4 HTCLs; IA *vs* 3 bact. strains.
752 // N // trichorzin G // weak to mod. cytotox. *vs* 4 HTCLs; IA to weak activ. *vs* 3 bact. strains.

264 Ascomycota *Penicillium janthinellum* // * // Reassignment of the structure of janthinolide A
753 // M // janthinolide C // NT.

265 Ascomycota *Aspergillus* sp // * // Absolute stereochemistry and cytotoxic effects of vismione E from marine sponge-derived fungus *Aspergillus* sp. 1901NT-1.2.2
754 // M // vismione E // weak cytotox. *vs* 2 HTCLs; IA *vs* 1 NHCL; IA *vs* 1 NMCL.



†755



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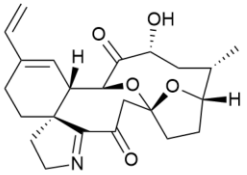
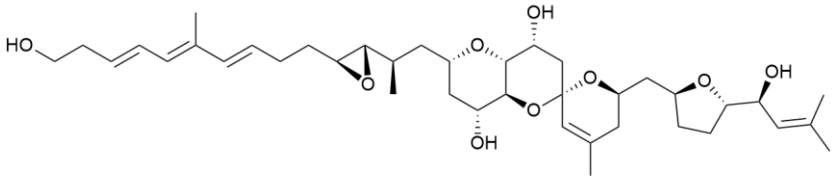


†757



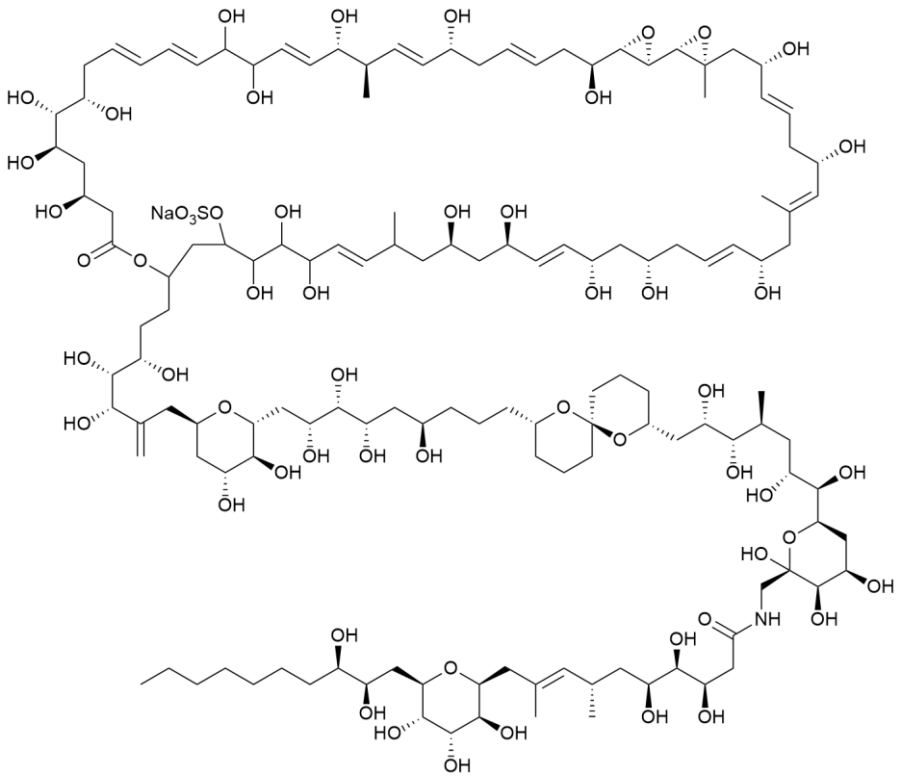
†758

281 Heterokontophyta *Seminavis robusta* // BCCM/DCG culture collection, Ghent, Belgium // Structure elucidation of the first sex-inducing pheromone of a diatom
755 // N // (2*S*,3*S*)-2-((2*S*,4*R*)-1-((2*S*,4*R*)-1-((4*R*,7*S*,10*S*,13*R*)-13-amino-7-isobutyl-10-methyl-6,9,12-trioxo-1,2-dithia-5,8,11-triazacyclotetradecane-4-carbonyl)-4-hydroxypyrrolidine-2-carbonyl)-4-hydroxypyrrolidine-2-carboxamido)-3-(sulfooxy)succinic acid // Pot. stimulator of diatom pheromone prod.

282 Bigyra *Thraustochytrium pachydermum* // Truong Sa Is., Truong Sa Archipelago, Vietnam // Chemical constituents from the marine microalgae *Thraustochytrium pachydermum*
756 // N // (24*R*)-ergosta-7,22-diene-3β,5α,9α-triol // IA *vs* 6 bact. strains; IA *vs* 1 fungal strain.

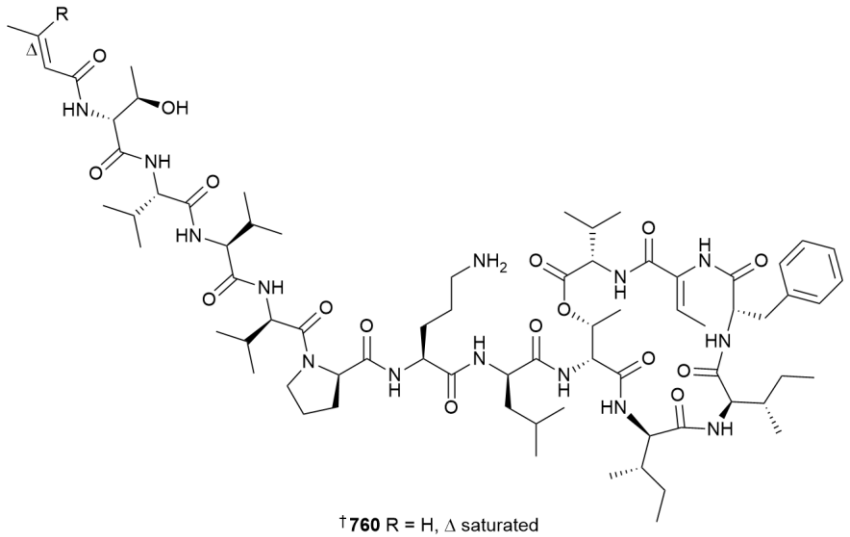
286 Miozoa *Vulcanodinium rogosum* // * // synthesis of portimines reveals the basis of their anti-cancer activity.
757 // R // portimine B // revised by total synth.

287 Miozoa *Prorocentrum lima* // * // total syntheses of nominal and actual prorocentin.
758 // R // prorocentin // revised by total synth.



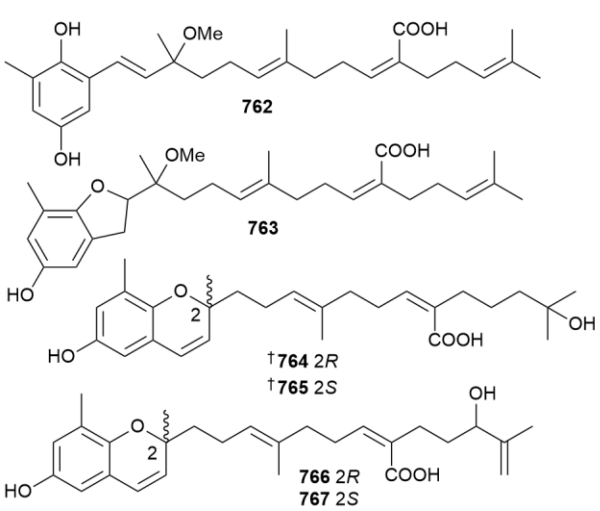
759

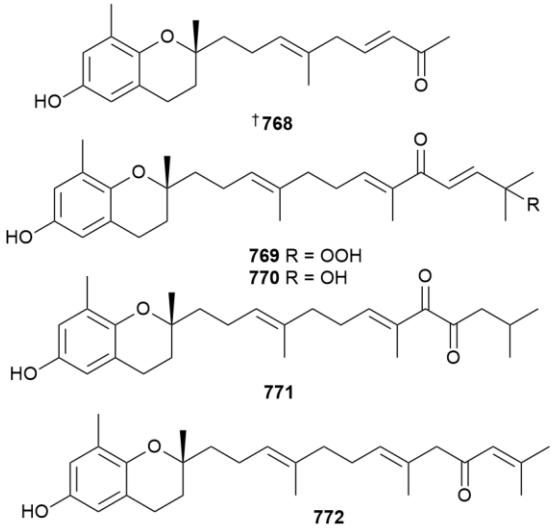
288 Miozoa // * // Relative stereochemical determination of the C61–C83 fragment of symbiodinolide using a stereodivergent synthetic approach
759 // R // symbiodinolide // rel. config. of C61 - C83 rev. by synth.

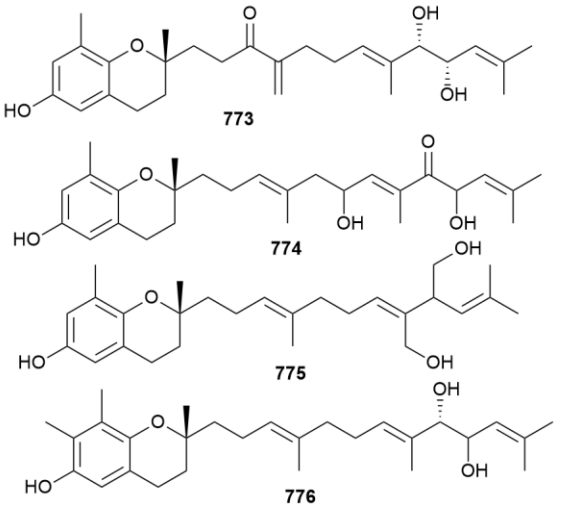


†**760** R = H, Δ saturated
†**761** R = Me

298 Chlorophyta *Bryopsis* sp. // Sugashima, Mie, Japan // Structure determination of kahalalide analogues based on metagenomic analysis of a *Bryopsis* sp. marine green alga
760 // N // kahalalide Z3 // abs. config. det. from both chemical and genomic anal.; weak cytotox. *vs* 1 murine CL.
761 // N // kahalalide Z4 // abs. config. det. from both chemical and genomic anal.; weak cytotox. *vs* 1 murine CL.



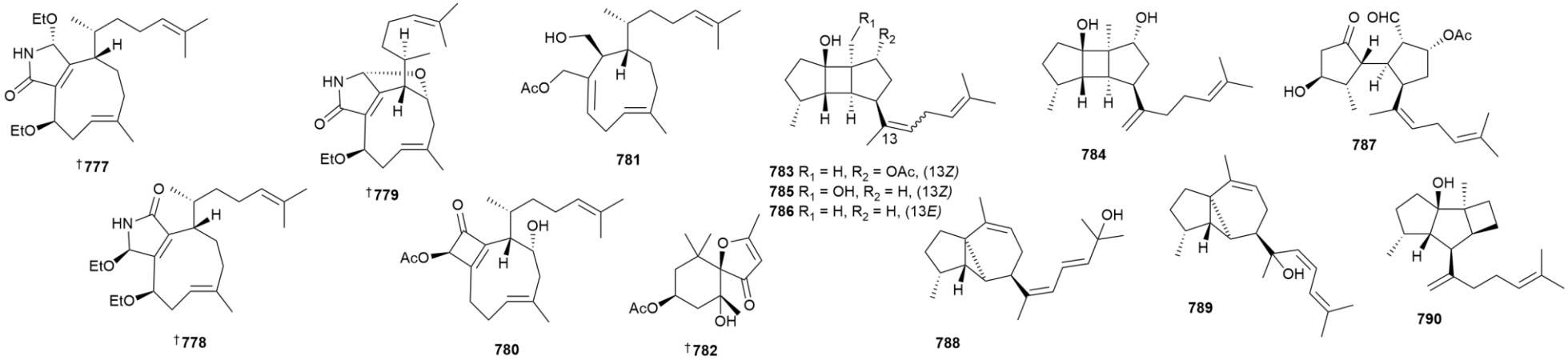




303 Ochrophyta *Sargassum macrocarpum* // Tsukumo-wan, Ishikawa Prefecture, Japan // Three new meroterpenoids from *Sargassum macrocarpum* and their inhibitory activity against amyloid β aggregation
762 // N // macrocarquinoid E // weak inhib. amyloid β aggregation.
763 // N // macrocarquinoid F/G // weak inhib. amyloid β aggregation.

304 Ochrophyta *Sargassum macrocarpum* // Jeju Is., Korea // Two new meroterpenoid derivatives from *Sargassum macrocarpum* with their anti-oxidant activities
764 // N // (-)-macrocarquinoid H // IA *vs* antioxid.
765 // N // (+)-macrocarquinoid H // IA *vs* antioxid.
766 // N // (-)-macrocarquinoid I // IA *vs* antioxid.
767 // N // (+)-macrocarquinoid I // IA *vs* antioxid.

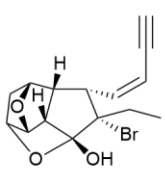
305 Ochrophyta *Sargassum siliquastrum* // Changdao Is., Yantai, Shandong Province, China // Anti-neuroinflammatory meroterpenoids from a Chinese collection of the brown alga *Sargassum siliquastrum*
768 // N // sargasilol A // IA *vs* 1 NMCL; weak to mod. anti-inflam.
769 // N // sargasilol B // IA *vs* 1 NMCL; IA *vs* anti-inflam.
770 // N // sargasilol C // IA *vs* 1 NMCL; IA *vs* anti-inflam.
771 // N // sargasilol D // IA *vs* 1 NMCL; IA *vs* anti-inflam.
772 // N // sargasilol E // IA *vs* 1 NMCL; IA *vs* anti-inflam.
773 // N // sargasilol F // IA *vs* 1 NMCL; IA *vs* anti-inflam.
774 // N // sargasilol G // IA *vs* 1 NMCL; weak anti-inflam.
775 // N // sargasilol H // IA *vs* 1 NMCL; weak anti-inflam.
776 // N // sargasilol I // IA *vs* 1 NMCL; IA *vs* anti-inflam.



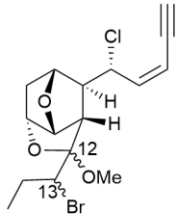
306 Ochrophyta *Dictyota coriacea* // Nanji Is., Wenzhou, Zhejiang Province, China // Antioxidant and neuroprotective xenicane diterpenes from the brown alga *Dictyota coriacea*
777 // A // dictyolactam A // weak antioxid.; possible artefact
778 // A // dictyolactam B // weak antioxid.; possible artefact
779 // A // 9-demethoxy-9-ethoxyjoalin // weak antioxid.; possible artefact
780 // N // 4-hydroxyisoacetylcoriacenone // weak antioxid.
781 // N // 19-*O*-acetyldictyodiol // weak antioxid.

307 Ochrophyta *Sargassum polycystum* // Danzhou, Hainan Province, China // A new sesquiterpene from the brown algae *Sargassum polycystum*
782 // N // spheciospongone C // NT.

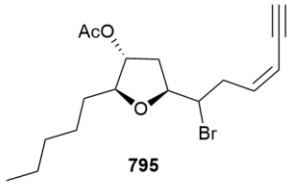
308 Ochrophyta *Rugulopteryx okamurae* // Punta Carnero, Cádiz, Spain // Rugulopteryx-derived spatane, secospatane, prenylcubebane and prenylkelsoane diterpenoids as inhibitors of nitric oxide production
783 // N // okaspatol A // IA to weak cytotox. *vs* 2 NMCL; weak inhib. NO prod.
784 // N // okaspatol B // NT.
785 // N // okaspatol C // IA *vs* 2 NMCL; weak to mod. inhib. NO prod.
786 // N // okaspatol D // NT.
787 // N // rugukamural D // IA to weak cytotox. *vs* 2 NMCLs; weak inhib. NO prod.
788 // N // okacubol A // NT.
789 // N // okacubol B // IA to weak cytotox. *vs* 2 NMCLs; weak inhib. NO prod.
790 // N // okamurol A // IA to weak cytotox. *vs* 2 NMCLs; weak inhib. NO prod.



791



†**792** 12*S*, 13*R*
†**793** 12*S*, 13*S*
794 12*R*



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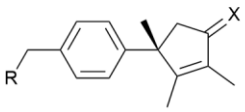
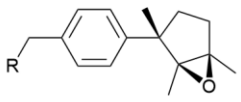
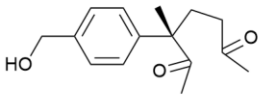


796 R = H, X = O
797 R = Br, X = H, H



798 R = OH
799 R = H



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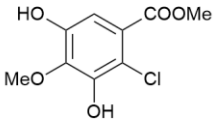

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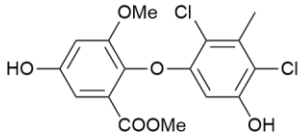

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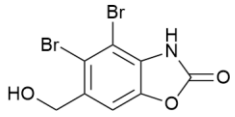
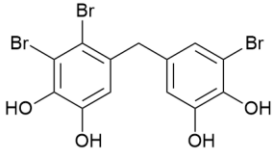


803



804

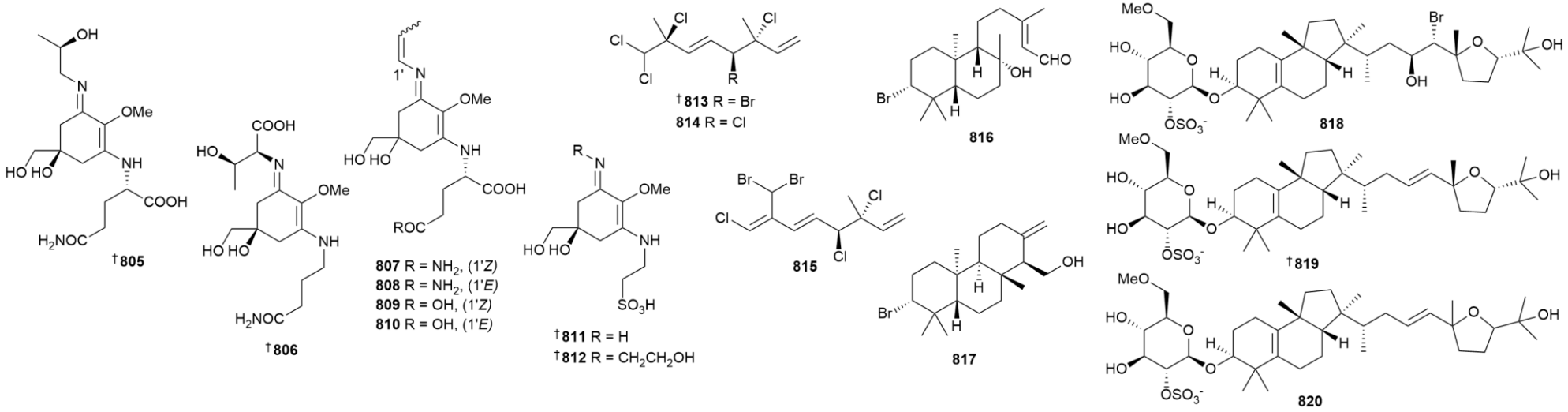
317 Rhodophyta *Laurencia mariannensis* // Iheya Is., Okinawa Prefecture, Japan // A new isomaneonene derivative from the red alga *Laurencia* cf. *mariannensis*
791 // N // isomaneonene C // IA *vs* MRSA

318 Rhodophyta *Laurencia majuscula* // Hurghada, Egypt // Secondary metabolites with anti-inflammatory activity from *Laurencia majuscula* collected in the Red Sea
792 // N // maneonene F // IA *vs* NO prod.
793 // N // maneonene G // IA *vs* NO prod.
794 // N // maneonene H // NT.
795 // N // (3*Z*,7*S**,9*R**,10*S**)-9-acetoxy-6-bromo-7,10-epoxypentadec-3-en-1-yne // Weak inhib. *vs* NO prod.
796 // N // 4-oxoisolaurene // IA *vs* NO prod.
797 // N // 15-bromoisolaurene // IA *vs* NO prod.
798 // N // (1*S**,2*S**,3*R**)-2,3-epoxy-15-hydroxydihydroisolaurene // IA *vs* NO prod.
799 // N // (1*S**,2*S**,3*R**)-2,3-epoxydihydroisolaurene // NT.
800 // N // 2,3-dioxo-15-hydroxy-seco-laurene // IA *vs* NO prod.

319 Rhodophyta *Solieria* sp. // Zhanjiang City, Guangdong Province, China // A new chlorobenzoate derivative from the red alga *Solieria* sp.
801 // N // solieriate // IA *vs* 6 bact. strains.

320 Rhodophyta *Laurencia* sp. // Zhanjiang City, Guangdong Province, China // Two new halogenated metabolites from the red alga *Laurencia* sp.
802 // N // laurenhalogen A // IA *vs* 5 bact. strains.
803 // N // laurenhalogen B // IA *vs* 5 bact. strains.

321 Rhodophyta *Symphyocladia latiuscula* // Yantai coastal zone, Shandong province, China // Bromophenols from the marine red alga *Symphyocladia latiuscula* and their radical scavenging activity
804 // N // 2,3,5′-tribromo-3′,4,4′,5-tetrahydroxy-diphenylmethane // IA *vs* anti-inflam.

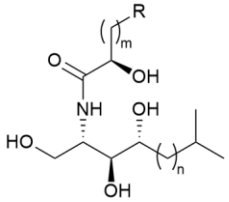


322 Rhodophyta *Bostrychia scorpioides*, Rhodophyta *Catenella caespitosa* // Roscoff, Brittany, France // Isolation and structure elucidation of novel mycosporine-like amino acids from the two intertidal red macroalgae *Bostrychia scorpioides* and *Catenella caespitosa*
805 // N // bostrychine G // NT.
806 // N // bostrychine H // NT.
807 // N // bostrychine I // NT.
808 // N // bostrychine J // NT.
809 // N // bostrychine K // NT; isol. as mixt.
810 // N // bostrychine L // NT; isol. as mixt.
811 // N // catenelline B // NT.
812 // N // catenelline C // NT.

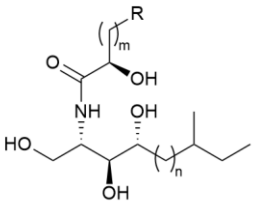
323 Rhodophyta *Portieria hornemannii* // Pescadores Is., Taiwan // Anti-inflammatory halogenated monoterpenes from the red alga *Portieria hornemannii*
813 // N // (3*R*,4*S*,5*E*,7*S*)-4-bromo-3,7,8,8-tetrachloro-3,7-dimethyl-octa-1,5-diene // weak inhib. TNF-α; IA *vs* NHCL.
814 // N // (3*R**,4*S**,5*E*)-3,4,7,8,8-pentachloro-3,7-dimethyl-octa-1,5-diene // IA vs TNF-α; IA vs NHCL.
815 // N // (3*S*,4*R*,5*E*,7*Z*)-3,4,8-trichloro-7-dibromomethyl-3-methyl-octa-1,5,7-triene // IA vs TNF-α; IA vs NHCL.

324 Rhodophyta *Laurencia venusta* // Fukuyama, Hiroshima, Japan // Antifouling brominated diterpenoids from Japanese marine red alga *Laurencia venusta* Yamada
816 // N // aplysin-20 aldehyde // 75% inhibition of mussel *Mytilus galloprovincalis* fouling at 0.16 μmol.cm^{-2}
817 // N // 13-dehydroxyisoaplysin-20 // 70% inhibition of mussel *Mytilus galloprovincalis* fouling at 0.16 μmol.cm^{-2}

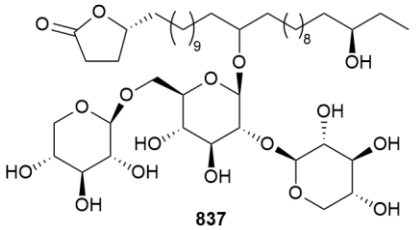
325 Rhodophyta *Peyssonnelia* sp. // Lau, Vanua Balavu Is., Fiji and Ogea Is., Fiji // Cryptic chemical variation in a marine red alga as revealed by nontargeted metabolomics
818 // N // peyssobaricanoside A // IA *vs* several bact. strains.
819 // N // peyssobaricanoside B // IA *vs* several bact. strains; abs. config. est. using cryoelectron microscopy.
820 // N // peyssobaricanoside C // IA *vs* several bact. strains.



821 m = 19, n = 10, R = Me
822 m = 18, n = 11, R = Me
823 m = 20, n = 11, R = Me
824 m = 18, n = 11, R = *i*pr
825 m = 22, n = 12, R = Me
826 m = 23, n = 11, R = Me
827 m = 20, n = 12, R = Me
828 m = 18, n = 12, R = *i*pr
829 m = 22, n = 12, R = Me
830 m = 23, n = 12, R = Me



831 m = 19, n = 11, R = Me
832 m = 20, n = 11, R = Me
833 m = 18, n = 11, R = *i*pr
834 m = 21, n = 11, R = Me
835 m = 22, n = 11, R = Me
836 m = 23, n = 11, R = Me



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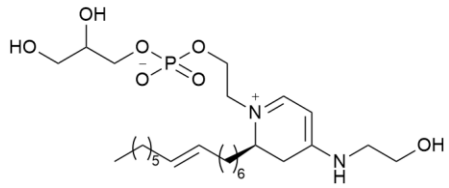
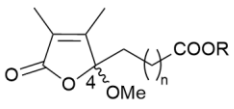


838

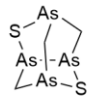
334 Porifera *Monanchora clathrata* // Western Australia // Phytoceramides from the marine sponge *Monanchora clathrata*: structural analysis and cytoprotective effects
821 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-15-methylhexadecan-2-yl)docosanamide // IA *vs* 2 HTCLs.
822 // N // (*R*)-2-hydroxy-*N*-((2*S*,3S,4*R*)-1,3,4-trihydroxy-16-methylheptadecan-2-yl)henicosanamide // IA *vs* 2 HTCLs.
823 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methylheptadecan-2-yl)tricosanamide // IA *vs* 2 HTCLs.
824 // N // (*R*)-2-hydroxy-21-methyl-N-((2S,3*S*,4*R*)-1,3,4-trihydroxy-16-methylheptadecan-2-yl)docosanamide // IA *vs* 2 HTCLs.
825 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-17-methyloctadecan-2-yl)pentacosanamide // IA *vs* 2 HTCLs.
826 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methylheptadecan-2-yl)hexacosanamide // IA *vs* 2 HTCLs.
827 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-17-methyloctadecan-2-yl)tricosanamide // IA *vs* 2 HTCLs.
828 // N // (*R*)-2-hydroxy-21-methyl-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-17-methyloctadecan-2-yl)docosanamide // IA *vs* 2 HTCLs.
829 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-17-methyloctadecan-2-yl)pentacosanamide // IA *vs* 2 HTCLs.
830 // N // (*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-17-methyloctadecan-2-yl)hexacosanamide // IA *vs* 2 HTCLs.
831 // N // (2*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)docosanamide // IA *vs* 2 HTCLs.
832 // N // (2*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)tricosanamide // IA *vs* 2 HTCLs.
833 // N // (2*R*)-2-hydroxy-21-methyl-N-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)docosanamide // IA *vs* 2 HTCLs.
834 // N // (2*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)tetracosanamide // IA *vs* 2 HTCLs.
835 // N // (2*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)pentacosanamide // IA *vs* 2 HTCLs.
836 // N // (2*R*)-2-hydroxy-*N*-((2*S*,3*S*,4*R*)-1,3,4-trihydroxy-16-methyloctadecan-2-yl)hexacosanamide // IA *vs* 2 HTCLs.

335 Porifera *Hymeniacidon assimilis* // Dredge (160 m), Urup Is., Pacific Ocean // Assimiloside A, a glycolipid with immunomodulatory activity from the northwestern Pacific marine sponge *Hymeniacidon assimilis*
837 // N // assimiloside A // Pro-inflam. at 0.01 - 10 μM *vs* RAW264.7 cells, non-tox. at these concs.

336 Porifera *Clathria flaviformis* // Riding Rock Point, San Salvador Is., Bahamas // Molecular networking revealed unique UV-absorbing phospholipids: favilipids from the marine sponge *Clathria faviformis*
838 // N // favilipid A // weak inihib. 5 of 24 kinases; undergoes unusual H-D exchange in CD_3OD.



†**839** 4*S*, n = 10, R = H
†**840** 4*R*, n = 10, R = H
†**841** 4*S*, n = 8, R = Me
†**842** 4*R*, n = 8, R = Me



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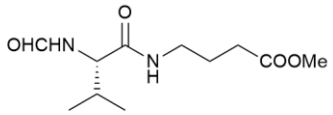
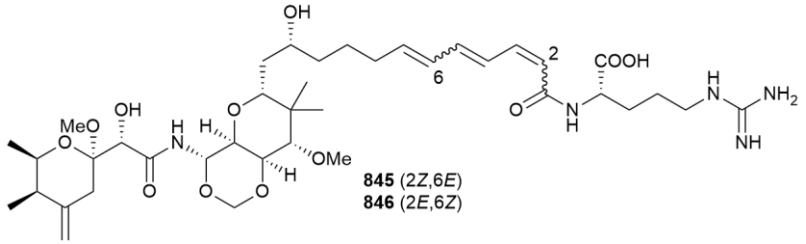


†**844**



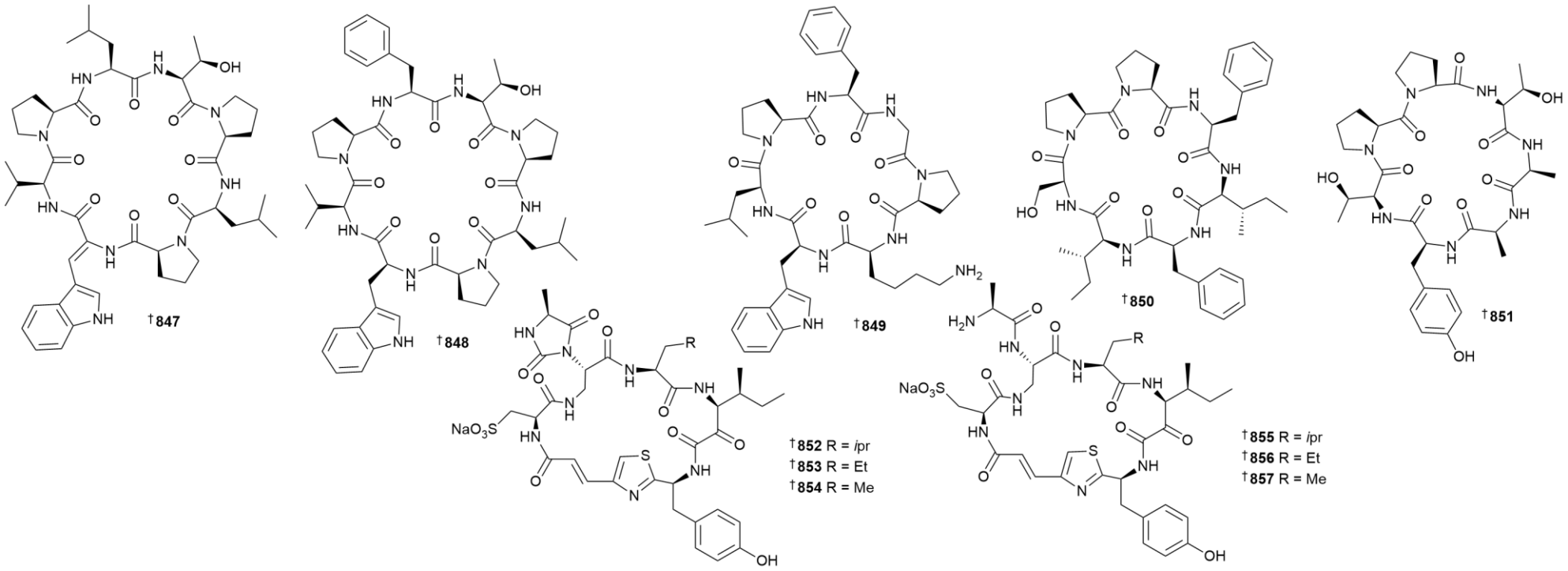
845 (2*Z*,6*E*)
846 (2*E*,6*Z*)

337 Porifera *Suberites* sp. // Xuwen County, Zhanjiang City, Guangdong Province // Two new pairs of enantiomeric butenolides from the marine sponge *Suberties* sp.
839 // N // (+)-suberiteslide A // isol. as rac.; IA *vs* 2 bact. strains; IA *vs* 2 HTCLs, IA *vs* NO prod.
840 // N // (−)-subertieslide A // isol. as rac.; IA *vs* 2 bact. strains; IA *vs* 2 HTCLs; IA *vs* NO prod.
841 // N // (+)-subertieslide B // isol. as rac.; IA *vs* 2 bact. strains; IA *vs* 2 HTCLs; IA *vs* NO prod.
842 // N // (−)-subertieslide B // isol. as rac.; IA *vs* 2 bact. strains; IA *vs* 2 HTCLs; IA *vs* NO prod.

338 Porifera *Echinochalina bargibanti* // NE coast, New Caledonia // Expanding the chemical space of arsenicin A-C related polyarsenicals and evaluation of some analogs as inhibitors of glioblastoma stem cell growth
843 // N // arsenicin D // identified as MNP following total synth.

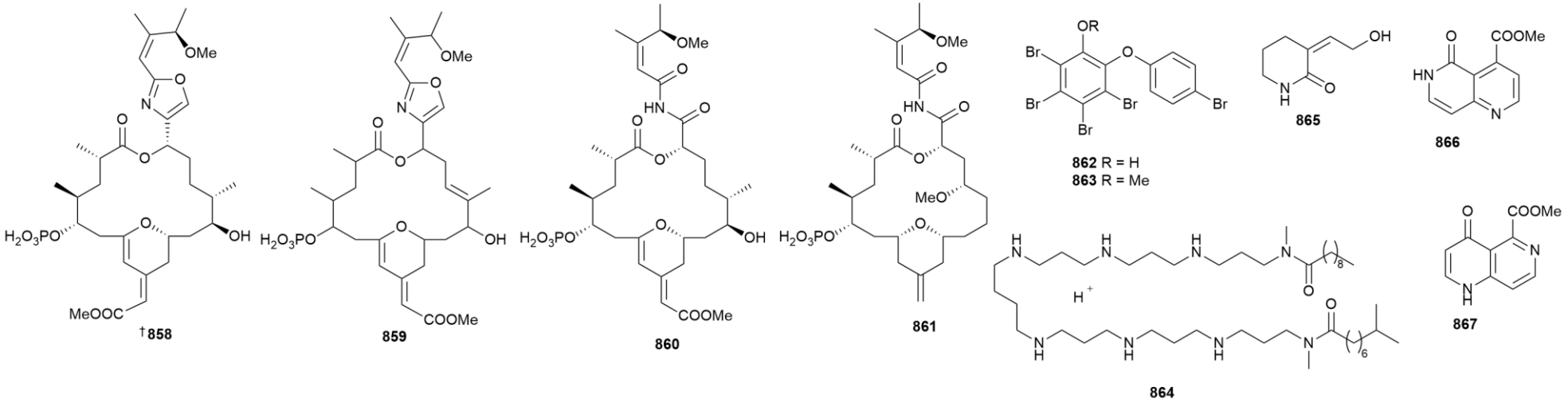
339 Porifera *Haliclona baeri* // Xuwen County, Zhanjiang City, Guangdong Province, China // A new amide from the marine sponge *Haliclona baeri*
844 // N // baeriamide // IA *vs* 2 HTCLs; IA *vs* 2 bact. strains; IA *vs* 1 virus strain.

340 Porifera *Theonella conica* // Amami-Oshima Is., Kagoshima Prefecture, Japan // Two onnamide analogs from the marine sponge *Theonella conica*: evaluation of geometric effects in the polyene systems on biological activity
845 // N // 2*Z*-onnamide A // weak to mod. cytotox. *vs* 1 HTCL and 1 MTCL.
846 // N // 6*Z*-onnamide A // weak to mod. cytotox. *vs* 1 HTCL and 1 MTCL.



341 Porifera *Phakellia* sp. // Yongxing Is., Xisha Is., China // Phakellisins A−E, cyclopeptides from a marine sponge *Phakellia* sp. guided by LC-MS (2131)
847 // N // phakellisin A // weak cytotox. *vs* 1 of 8 HTCLs; weak apoptoic
848 // N // phakellisin B // IA *vs* 8 HTCLs.
849 // N // phakellisin C // IA *vs* 8 HTCLs.
850 // N // phakellisin D // IA *vs* 8 HTCLs.
851 // N // phakellisin E // IA *vs* 8 HTCLs.

342 Porifera *Theonella* sp. // Osprey Reef, Far North Queensland, Australia // Cyclotheonellazoles D-I, potent elastase inhibitory thiazole-containing cyclic peptides from *Theonella* sp. (2131)
852 // N // cyclotheonellazole D // pot. inhib. elastase; weak inhib. chymotrypsin; IA *vs* SARS-CoV-2 3CLs.
853 // N // cyclotheonellazole E // pot. inhib. elastase; weak inhib. chymotrypsin; IA *vs* SARS-CoV-2 3CLs.
854 // N // cyclotheonellazole F // pot. inhib. elastase; weak inhib.chymotrypsin; IA *vs* SARS-CoV-2 3CLs.
855 // N // cyclotheonellazole G // pot. inhib. elastase; weak inhib. chymotrypsin; IA *vs* SARS-CoV-2 3CLs.
856 // N // cyclotheonellazole H // pot. inhib. elastase; weak inhib. chymotrypsin; IA *vs* SARS-CoV-2 3CLs.
857 // N // cyclotheonellazole I // pot. inhib. elastase; weak inhib. chymotrypsin; IA *vs* SARS-CoV-2 3CLs.



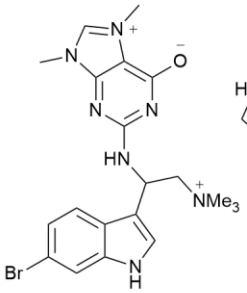
343 Porifera *Cinachyrella enigmatica* // South coast, Papua New Guinea // Enigmazole phosphomacrolides from the marine sponge *Cinachyrella enigmatica*
858 // N // cis-enigmazole B // weak cytotox. *vs* 1 HTCL.
859 // N // dehydroenigmazole B // weak cytotox. *vs* 1 HTCL.
860 // N // enigmimide B // IA *vs* 1 HTCL.
861 // N // enigmimide A // IA *vs* 1 HTCL.

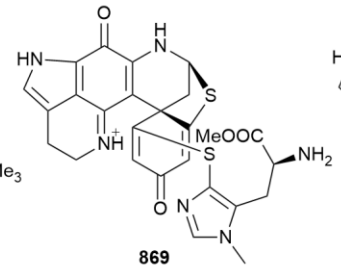
344 Porifera *Dysidea fragilis* // Mozambique // Minor polybrominated diphenyl ethers from the marine sponge *Dysidea fragilis*
862 // M // 2-(4′-bromophenoxy)-3,4,5,6-tetrabromophenol // IA to weak activ. *vs* 2 bact. strains; IA *vs* 1 fungal strain.
863 // M // 2-(4′-bromophenoxy)-3,4,5,6-tetrabromoanisole // IA *vs* 2 bact. strains; IA *vs* 1 fungal strain.

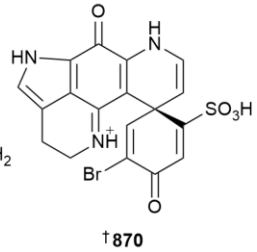
345 Porifera *Aaptos lobata* // Solitary Is., Coffs Harbour, New South Wales, Australia // Amphiphilic polyamine α-synuclein aggregation inhibitors from the Sponge *Aaptos lobata*
864 // N // aaptolobamine A // mod. activ.*vs* 3 bact. strains; weak cytotox. *vs.* 1 HTCL and 1 NMCL.

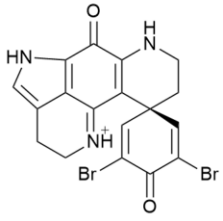
346 Porifera *Dysidea* sp. // Xuwen County, Zhanjiang City, Guangdong Province, China // Isolation and total synthesis of dysidone A: a new piperidone alkaloid from the marine sponge *Dysidea* sp.
865 // N // dysidone A // IA *vs* NO prod.; total synth. also achieved

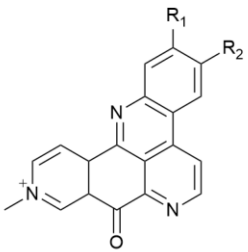
347 Porifera *Aaptos suberitoides* // Xisha Is., China // Anti-inflammatory effects of new naphthyridine from sponge *Aaptos suberitoides* in LPS-stimulated RAW 264.7 macrophages via regulation of MAPK and Nrf2 signaling pathways
866 // N // 4-methoxycarbonyl-5-oxo-1,6-naphthyridine // IA *vs* 1 NMCL; IA *vs* NO prod.
867 // N // 5-methoxycarbonyl-4-oxo-1,6-naphthyridine // IA *vs* 1 NMCL; IA *vs* NO prod.

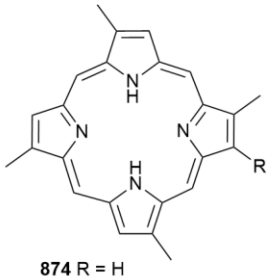


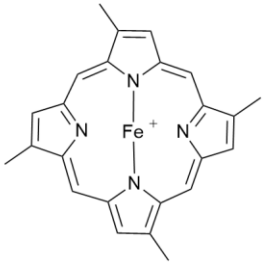


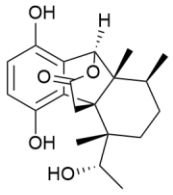












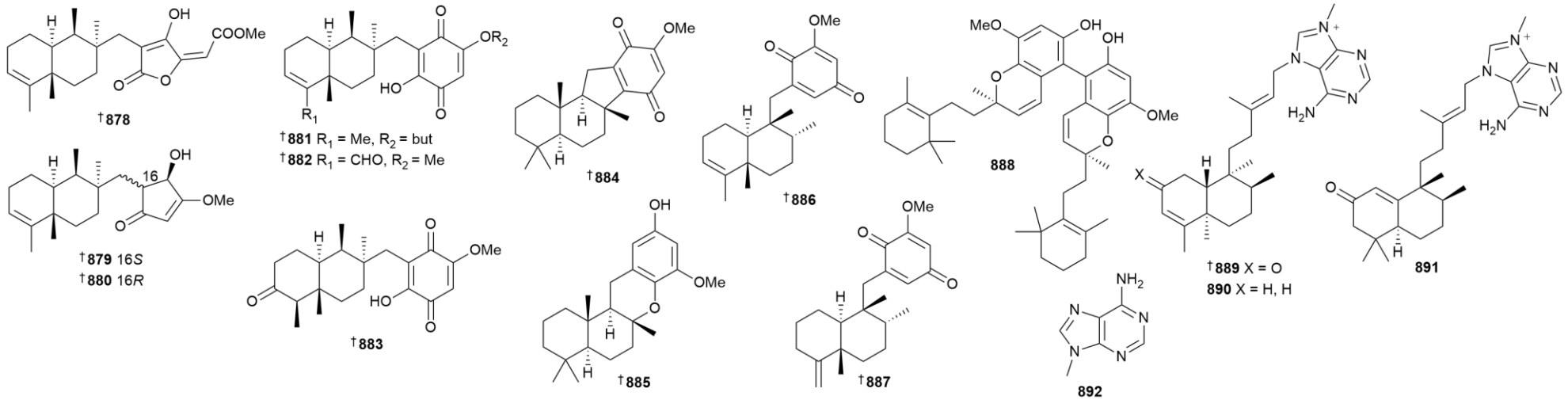
348 Porifera *Geodia barretti* // Dredge (388 m), Iceland // Geobarrettin D, a rare herbipoline-containing 6-bromoindole alkaloid from *Geodia barretti*
868 // N // geobarrettin D // Isol. as rac.; weak to mod. inhib. of IL12p40

349 Porifera *Latrunculia kaakaariki, Latrunculia brevis* // Northland, New Zealand // An investigation of Structure-Activity Relationships and cell death mechanisms of the marine alkaloids discorhabdins in Merkel cell carcinoma cells
869 // A // discorhabdin K methyl ester // IA to mod. cytotox. *vs* 7 HTCLs.
870 // N // 5-sulfonyl-7,8-dehydrodiscorhabdin E // IA to mod. cytotox. *vs* 7 HTCLs.
871 // N // 7,8-dehydrodiscorhabdin C // IA to weak cytotox. *vs* 7 HTCLs.

350 Porifera *Petrosia* sp. // Malaysia // Screen for new antimicrobial natural products from the NCI program for natural product discovery prefractionated extract library
872 // N // 2-bromodeoxyamphimedine // IA to pot. activ. *vs.* 9 bact. strains; IA. *vs.* 1 fungal strain.
873 // N // 3-bromodeoxyamphimedine // IA pot. activ. *vs.* 9 bact. strains; IA *vs.* 1 fungal strain.

351 Porifera *Isabella* sp. // Dredge (97 m), Zuytdorp, Western Australia // Type-I hemins and free porphyrins from a Western Australian sponge *Isabela* sp.
874 // N // isabellin A // Pot. cytotox. *vs* 2 HTCLs; IA *vs* 2 bact. strains; IA *vs* 2 fungal strains.
875 // N // isabellin B // IA *vs* 2 HTCLs; IA *vs* 2 bact. strains; IA *vs* 2 fungal strains.
876 // N // isabellihemin A // IA *vs* 2 HTCLs; IA *vs* 2 bact. strains; IA *vs* 2 fungal strains.

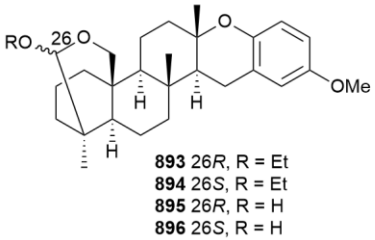
352 Porifera *Dysidea* sp. // Xisha Is., China // Dysambiol, an anti-inflammatory secomeroterpenoid from a *Dysidea* sp. marine sponge
877 // N // dysambiol // anti-inflam. at 1 - 5 µM *vs* RAW264.7 cells *via* down regulating kinase expression, non-tox. at these concs.



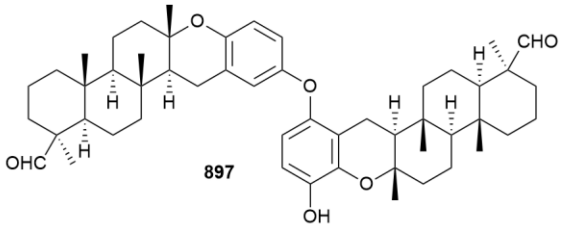
353 Porifera *Pseudoceratina purpurea* // Yongle Is., Xisha Is., South China Sea // Pseudoceranoids A–J, sesquiterpene-based meroterpenoids with cytotoxicity from the sponge *Pseudoceratina purpurea*
878 // N // pseudoceranoid A // IA *vs* 5 HTCLs; unprecedented crotonyl lactone.
879 // N // pseudoceranoid B // IA *vs* 5 HTCLs.
880 // N // pseudoceranoid C // IA *vs* 5 HTCLs.
881 // N // pseudoceranoid D // /IA to weak cytotox. *vs* 5 HTCLs.
882 // N // pseudoceranoid E // IA to weak cytotox. *vs* 5 HTCLs.
883 // N // pseudoceranoid F // IA *vs* 5 HTCLs.
884 // N // pseudoceranoid G // IA *vs* 5 HTCLs.
885 // N // pseudoceranoid H // IA *vs* 5 HTCLs.
886 // N // pseudoceranoid I // IA *vs* 5 HTCLs.
887 // N // pseudoceranoid J // IA *vs* 5 HTCLs.

354 Porifera *Dactylospongia elegans* // Keviang, New Ireland, Papua New Guinea // Thorectidiol A isolated from the marine sponge *Dactylospongia elegans* disrupts interactions of the SARS-CoV-2 spike receptor binding domain with the host ACE2 receptor
888 // N // thorectidiol A // isol. as rac.; mod. inhib. of SARS-Cov-2 spike protein receptor binding domain.

355 Porifera *Agelas nakamurai* // Orchid Is., Taiwan // Nakamusines A−C, new 9-methyladeninium diterpenoid alkaloids from a Formosan marine sponge *Agelas nakamurai*
889 // N // nakamusine A // IA *vs* 3 HTCLs.
890 // N // nakamusine B // IA *vs* 1 HTCL.
891 // N // nakamusine C // IA *vs* 3 HTCLs; IA *vs* 13 bact. strains.
892 // M // 9-methyladenine // NT.



893 26*R*, R = Et
894 26*S*, R = Et
895 26*R*, R = H
896 26*S*, R = H



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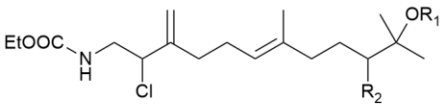
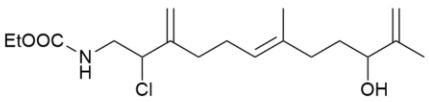


898 R_1 = Et, R_2 = OH
899 R_1 = H, R_2 = Cl



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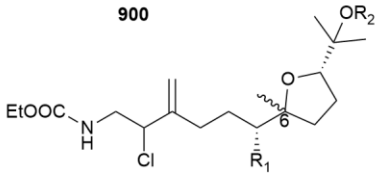
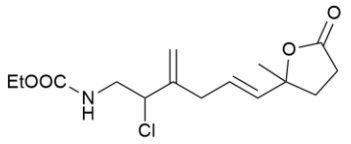
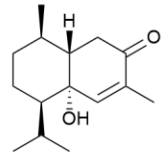


901 6*R*, R_1 = OH, R_2 = Et
902 6*S*, R_1 = H, R_2 = Et
903 6*R*, R_1 = OH, R_2 = H



904

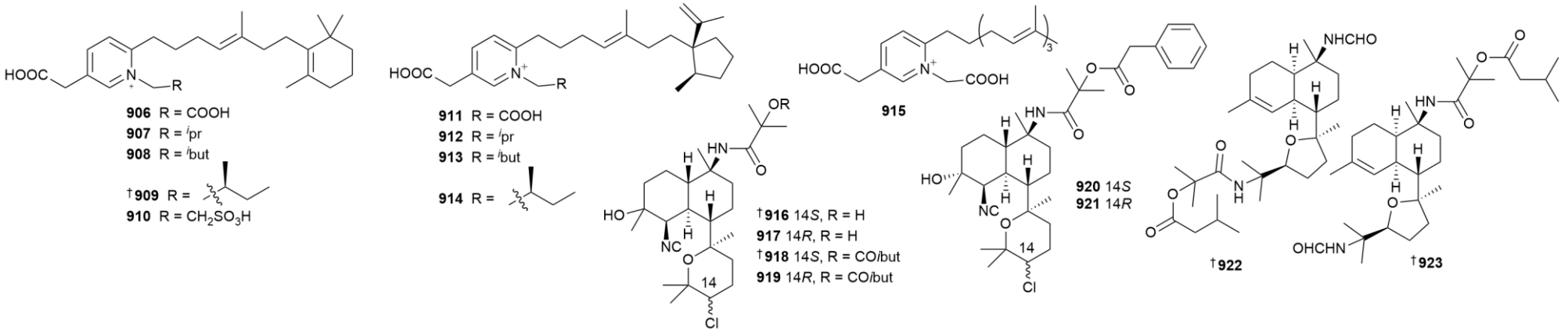


†**905**

356 Porifera *Petrosia* sp. // Kuri Point, Munda, New Georgia Is., Solomon Is. // Isolation and characterization of anti-mycobacterial natural products from a *Petrosia* sp. marine sponge
893 // A // 20-*O*-methyl-26-*O*-ethyl strongylophorine-15 // IA *vs. M. tuberculosis*; artefact of isol.
894 // A // 20-*O*-methyl-26-*O*-ethyl strongylophorine-16 // IA *vs. M. tuberculosis*; artefact of isol.
895 // N // 20-*O*-methyl strongylophorine-15 // IA *vs. M. tuberculosis*.
896 // N // 20-*O*-methyl strongylophorine-16 // IA *vs. M. tuberculosis*.
897 // N // distrongylophorine A // NT *vs.* Mtb.

357 Porifera *Aaptos* sp. // North Sulawesi, Indonesia // Aaptocarbamates A−G, chlorinated terpene carbamates with antiosteoclastogenic activities from the marine sponge *Aaptos* sp.
898 // N // aaptocarbamate A // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
899 // N // aaptocarbamate B // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
900 // N // aaptocarbamate C // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
901 // N // aaptocarbamate D // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
902 // N // aaptocarbamate E // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
903 // N // aaptocarbamate F // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.
904 // N // aaptocarbamate G // IA *vs* TRAP-positive osteoclasts from RANKL-treated RAW264 cells.

358 Porifera *Cliona* sp. // Xuwen County, Zhanjiang City, Guangdong Province, China // Clionaterpene, a new cadinene sesquiterpene from the marine sponge *Cliona* sp.
905 // N // clionaterpene // IA *vs* 1 HTCL and 5 bact. strains.

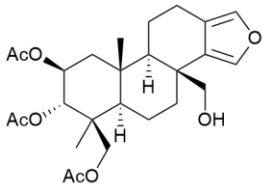


359 Porifera *Coscinoderma bakusi* // Fannuk Is., Chuuk, Federated States of Micronesia // Coscinoderines A–J: trisubstituted pyridinium-containing norterpenoids isolated from *Coscinoderma bakusi*, a tropical marine sponge

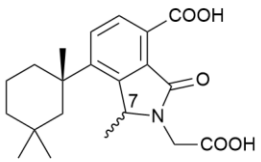
906 // N // coscinoderine A // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
907 // N // coscinoderine B // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
908 // N // coscinoderine C // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
909 // N // coscinoderine D // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
910 // N // coscinoderine E // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
911 // N // coscinoderine F // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
912 // N // coscinoderine G // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA to weak activ. *vs* 6 bact. strains.
913 // N // coscinoderine H // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.
914 // N // coscinoderine I // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA to weak activ. *vs* 6 bact. strains.
915 // N // coscinoderine J // IA *vs* 3 HTCLs; IA *vs* TRPA1; IA *vs* 6 bact. strains.

360 Porifera *Acanthella cavernosa* // Xisha Is., Hainan province, China // Kalihiacyloxyamides A-H, α-acyloxy amide substituted kalihinane diterpenes isolated from the sponge *Acanthella cavernosa* collected in the South China Sea

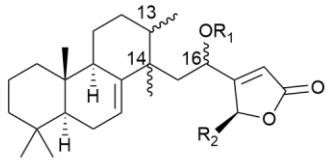
916 // N // kalihiacyloxyamide A // IA *vs* 5 HTCLs.
917 // N // kalihiacyloxyamide B // IA *vs* 5 HTCLs.
918 // N // kalihiacyloxyamide C // IA to weak cytotox. *vs* 5 HTCLs.
919 // N // kalihiacyloxyamide D // IA *vs* 5 HTCLs.
920 // N // kalihiacyloxyamide E // IA to weak cytotox. *vs* 5 HTCLs.
921 // N // kalihiacyloxyamide F // IA *vs* 5 HTCLs.
922 // N // kalihiacyloxyamide G // IA *vs* 5 HTCLs.
923 // N // kalihiacyloxyamide H // IA to weak cytotox. *vs* 5 HTCLs.



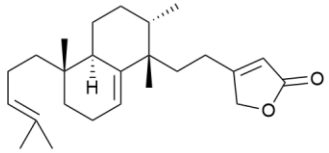
†**924**



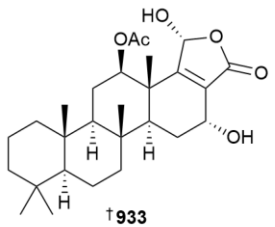
†**926** 7*R*
†**927** 7*S*



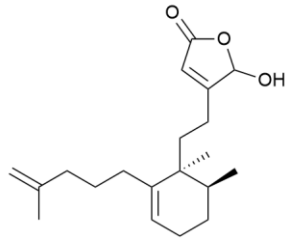
†**929** 13*S*,14*S*,16*R* R_1 = Me, R_2 = OH
†**930** 13*R*,14*R*,16*S* R_1 = R_2 = H
†**931** 13*R*,14*R*,16*R* R_1 = R_2 = H



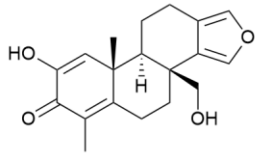
†**932**



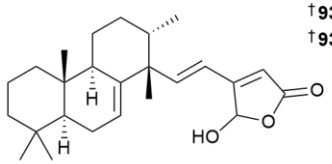
†**933**



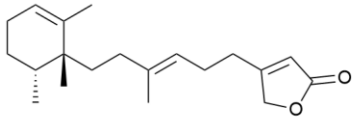
†**934**



†**925**



†**928**

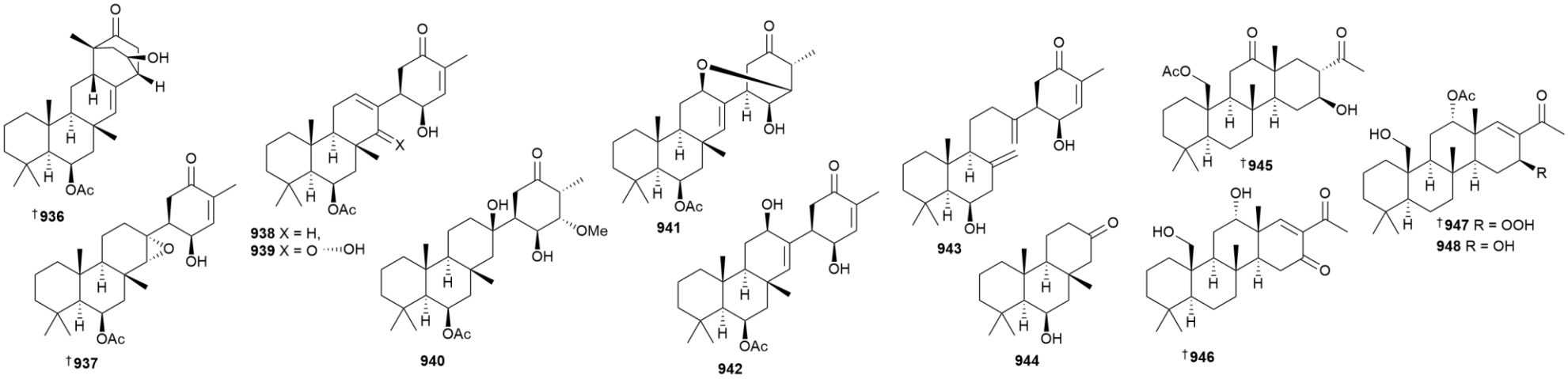


†**935**

361 Porifera *Spongia officinalis* // Shui Niupo Village, Danzhou City, Hainan Province, China // Two new spongian diterpene derivatives from the aquaculture sponge *Spongia officinalis* Linnaeus, 1759
924 // N // 2β,3α,19-triacetoxy-17-hydroxyspongia-13(16),14-diene // IA to weak cytotox. *vs* 4 HTCLs.
925 // N // 18-nor-2,17-hydroxyspongia-1,4,13(16),14-quaien-3-one // IA *vs* 4 HTCLs.

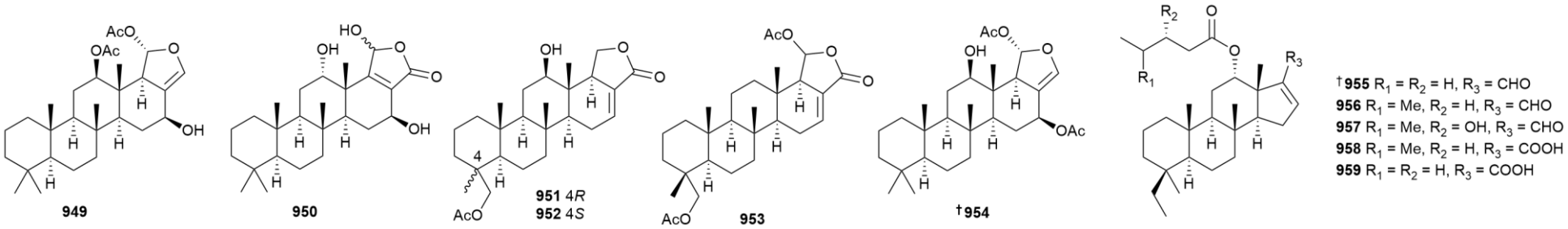
362 Porifera *Dendrilla* sp. // Y-Is., Exmouth Gulf, Western Australia // Dendrillic acids A and B: nitrogenous, rearranged spongian nor-diterpenes from a *Dendrilla* sp. marine sponge
926 // N // dendrillic acid A // IA *vs* 3 bact. strains; IA *vs* 1 fungal strain; IA *vs* 2 HTCLs: IA *vs* 2 parasites.
927 // N // dendrillic acid B // IA *vs* 3 bact. strains; IA *vs* 1 fungal strain; IA *vs* 2 HTCLs; IA *vs* 2 parasites.

363 Porifera *Sarcotragus* sp. // Xisha Is., China // Terpenoids from the sponge *Sarcotragus* sp. collected in the South China Sea
928 // N // sarcotragusolide A // IA *vs* 5 HTCLs.
929 // N // sarcotragusolide B // IA to weak cytotox. *vs* 5 HTCLs.
930 // N // sarcotragusolide C // IA *vs* 5 HTCLs.
931 // N // sarcotragusolide D // IA *vs* 5 HTCLs.
932 // N // dactylospene F // IA *vs* 5 HTCLs.
933 // N // 12-β-*O*-acetylhyrtiolide // IA to weak cytotox. *vs* 5 HTCLs.
934 // N // echinohalimane B // IA *vs* 5 HTCLs.
935 // N // oculatolide B // IA *vs* 5 HTCLs.



364 Porifera *Suberites* sp. // Palmer Station, Antarctica // Neosuberitenone, a new sesterterpenoid carbon skeleton; new suberitenones; and bioactivity against respiratory syncytial virus, from the Antarctic sponge *Suberites* sp.
936 // N // neosuberitenone A // IA *vs* 1 virus strain (RSV).
937 // N // suberitenone E // IA *vs* 1 virus strain (RSV).
938 // N // suberitenone F // weak activ. *vs* 1 virus strain ((RSV).
939 // N // suberitenone G // IA *vs* 1 virus strain (RSV).
940 // N // suberitenone H // IA *vs* 1 virus strain (RSV).
941 // N // suberitenone I // NT.
942 // N // suberitenone J // IA *vs* 1 virus strain (RSV).
943 // N // secosuberitenone A // NT.
944 // N // norsuberitenone A // NT.

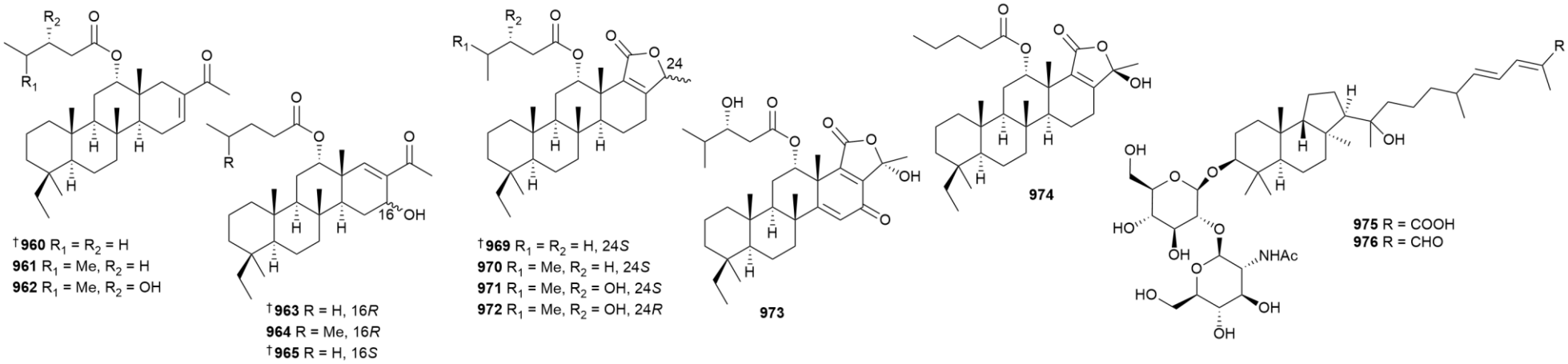
365 Porifera *Lendenfeldia* sp. // Southern Taiwan // Nor-24-homoscalaranes, neutrophilic Inflammatory mediators from the marine sponge *Lendenfeldia* sp.
945 // N // lendenfeldarane R // IA *vs* superoxide prod.; IA *vs* elastase.
946 // N // lendenfeldarane S // weak inhib. superoxide prod; IA *vs* elastase.
947 // N // lendenfeldarane T // IA *vs* superoxide prod.; IA *vs* elastase.
948 // N // lendenfeldarane U // weak inhib. superoxide prod; IA *vs* elastase.



366 Porifera *Hyrtios erecta* // Ximao Is., Hainan Province, China // Hyrtiosins F and G, two new scalarane sesterterpenes from the South China sea sponge *Hyrtios erecta*
949 // N // hyrtiosin F // IA *vs* anti-inflam.; IA *vs* bact. strains; IA *vs* PTP1B.
950 // N // hyrtiosin G // IA *vs* anti-inflam.; IA *vs* bact. strains; IA *vs* PTP1B.

367 Porifera *Hyrtios erecta* // Ximao Is., Hainan province, China // Scalarane sesterterpenes from the South China Sea sponge *Hyrtios erecta* and their PTP1B inhibitory activity
951 // N // hyrtiosin H // IA *vs*. PTP1B.
952 // N // hyrtiosin I // IA *vs*. PTP1B.
953 // N // hyrtiosin J // IA *vs*. PTP1B.
954 // R // heteronemin // Revised by XRD

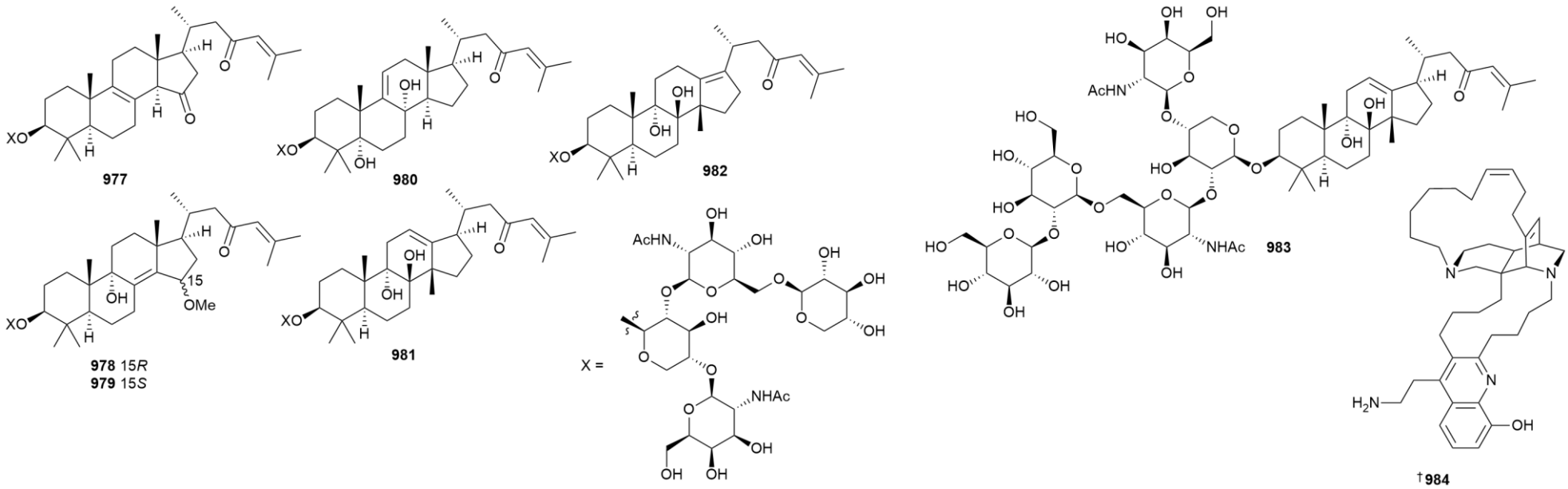
368 Porifera *Phyllospongia foliascens* // Woody Is., Xisha Is., China // Phyllospongianes A–E, dinorscalarane sesterterpenes from the marine sponge *Phyllospongia foliascens*
955 // N // phyllospongiane A // IA to weak cytotox. *vs* 6 HTCLs; mod. activ. *vs* 6 bact. strains.
956 // N // phyllospongiane B // IA to weak cytotox. *vs* 6 HTCLs; mod. activ. *vs* 6 bact. strains.
957 // N // phyllospongiane C // IA to mod. cytotox. *vs* 6 HTCLs; IA. *vs* 6 bact. strains.
958 // N // phyllospongiane D // IA to weak cytotox. *vs* 6 HTCLs; mod. activ. *vs* 6 bact. strains.
959 // N // phyllospongiane E // IA *vs* 6 HTCLs; IA to weak activ. *vs* 6 bact. strains.



369 Porifera *Phyllospongia foliascens* // Woody Is., South China Sea // Phyllofenones F–M, scalarane sesterterpenes from the marine sponge *Phyllospongia foliascens*
960 // N // phyllofenone F // IA *vs* 4 HTCLs.
961 // N // phyllofenone G // IA to weak cytotox. *vs* 4 HTCLs.
962 // N // phyllofenone H // NT.
963 // N // phyllofenone I // IA *vs* 4 HTCLs.
964 // N // phyllofenone J // weak cytotox. *vs* 4 HTCLs.
965 // N // phyllofenone K // IA *vs* 4 HTCLs.
966 // N // phyllofenone L // IA *vs* 4 HTCLs.
967 // N // phyllofenone M // weak cytotox. *vs* 4 HTCLs.

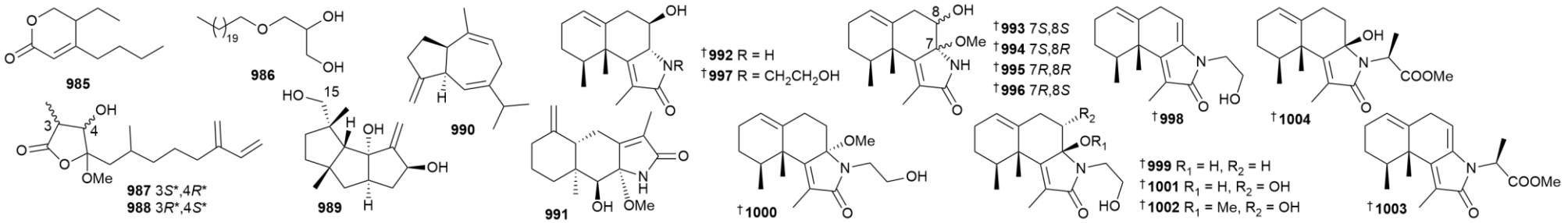
370 Porifera *Phyllospongia foliascens* // Yongle Is., Xisha Isl., China // Phyllofolactones N-T, bioactive bishomoscalarane sesterterpenoids from the marine sponge *Phyllospongia foliascens*
968 // N // phyllofolactone N // IA *vs* 4 HTCLs.
969 // N // phyllofolactone O // IA *vs* 4 HTCLs.
970 // N // phyllofolactone P // IA *vs* 4 HTCLs.
971 // N // phyllofolactone Q // IA *vs* 4 HTCLs.
972 // N // phyllofolactone R // IA *vs* 4 HTCLs.
973 // N // phyllofolactone S // IA to weak cytotox. *vs* 4 HTCLs.
974 // N // phyllofolactone T // IA *vs* 4 HTCLs.

371 Porifera *Rhabdastrella globostellata* // Cham Is., Vietnam // Rhabdastrellosides A and B: Two new isomalabaricane glycosides from the marine sponge *Rhabdastrella globostellata*, and their cytotoxic and cytoprotective effects
975 // N // rhabdastrelloside A // IA *vs* 2 HTCLs.
976 // N // rhabdastrelloside B // IA *vs* 2 HTCLs; weak rescue of $CoCl_2$ induced cytotox.



372 Porifera *Melophlus sarasinorum* // Kimbe Bay, Papua New Guinea // Additional sarasinosides from the marine sponge *Melophlus sarasinorum* collected from the Bismarck Sea
977 // N // sarasinoside C_4 // NT.
978 // N // sarasinoside C_5 // IA *vs* 5 HTCLs; IA *vs* 3 bact. strains; IA *vs* 6 fungal strains.
979 // N // sarasinoside C_6 // IA *vs* 5 HTCLs; IA *vs* 3 bact. strains; IA *vs* 6 fungal strains.
980 // N // sarasinoside C_7 // NT.
981 // N // sarasinoside C_8 // NT.
982 // N // sarasinoside C_9 // NT.
983 // R // sarasinoside R // NT.

378 Porfiera *Melophlus sarasinorum* // Bismarck Sea // Additional sarasinosides from the marine sponge *Melophlus sarasinorum* collected from the Bismarck Sea
984 // R // njaoamine C // revised by tot. synth.



410 Cnidaria *Sarcophyton glaucum* // Jeddah, Saudi Arabia // Cembranoids from the Red Sea soft coral *Sarcophyton glaucum* protect against indomethacin-induced gastric injury
985 // N // sarcoglaucanoate // NT.

411 Cnidaria *Litophyton mollis* // Hurghada, Egypt // New cytotoxic monoalkyl glycerol ether from the Red Sea soft coral *Nephthea mollis*
986 // N // 3-(*n*-henicosyloxy)propane-1,2-diol // IA *vs* 5 HTCLs.

412 Cnidaria *Sinularia scabra* // Xisha Is., China // Discovery of uncommon terpenoids from the South China Sea soft coral *Sinularia scabra*
987 // N // sinulalide A // IA *vs* 2 HTCLs.
988 // N // sinulalide B // weak inhib. osteoclast assay; IA *vs* 2 HTCLs.

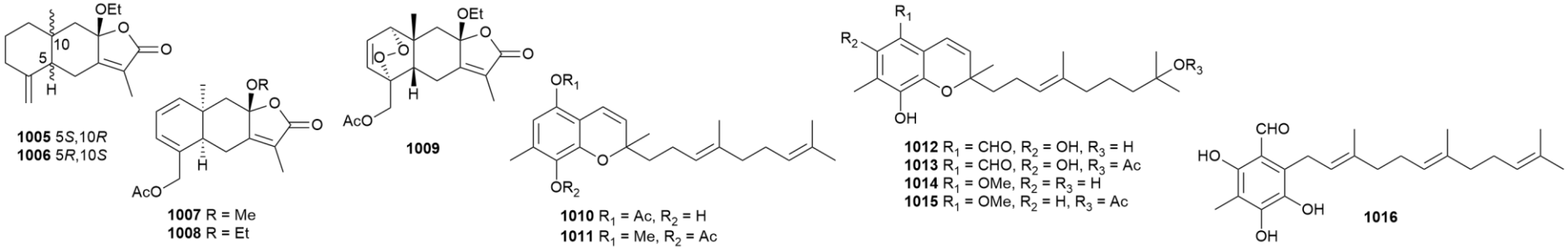
413 Cnidaria *Capnella imbricata* // Orchid Is. (Lanyu Is.), Taiwan // A new capnellene skeleton from the octocoral *Capnella imbricata* (Quoy & Gaimard, 1833)
989 // N // $\Delta^{9(12)}$-capnellene-8β,10α,15-triol // IA *vs* anti-inflam..

414 Cnidaria *Litophyton arboreum* // Neweba, Red Sea, Egypt // Litoarbolide A: an undescribed sesquiterpenoid from the Red Sea soft coral *Litophyton arboreum* with an *in vitro* anti-malarial activity evaluation
990 // N // litoarbolide A // IA *vs P. falciparum* D6 and W2 clones; IA *vs* 1 NMCL.

415 Cnidaria *Cespitularia* sp // Green Is., Taiwan // New verticillene diterpenoids, eudesmane sesquiterpenoids, and hydroperoxysteroids from the Taiwanese soft coral *Cespitularia* sp
991 // N // cespilamide F // IA *vs* anti-inflam.; IA *vs* 3 HTCLs.

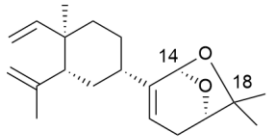
416 Cnidaria *Clavularia koellikeri* // Xisha Is., China // Clavukoelloids A—M, thirteen rare *N*-containing nardosinane type sesquiterpenoids from the soft coral *Clavularia koellikeri*
992 // N // clavukoelloid A // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
993 // N // clavukoelloid B // XRD; IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
994 // N // clavukoelloid C // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
995 // N // clavukoelloid D // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
996 // N // clavukoelloid E // XRD; IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
997 // N // clavukoelloid F // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
998 // N // clavukoelloid G // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
999 // N // clavukoelloid H // XRD; IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
1000 // N // clavukoelloid I // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
1001 // N // clavukoelloid J // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
1002 // N // clavukoelloid K // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
1003 // N // clavukoelloid L // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.
1004 // N // clavukoelloid M // IA *vs* anti-inflam.; IA *vs* hepatoprotective effects.

7 Cnidarians

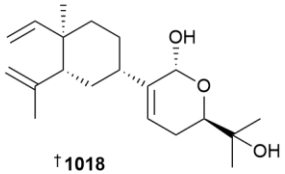


417 Cnidaria *Clavularia* sp // Green Is., Taiwan // Chemical constituents from soft coral *Clavularia* spp. demonstrate antiproliferative effects on oral cancer cells
1005 // N // clasamane A // IA *vs* 1 HTCL.
1006 // N // clasamane B // NT.
1007 // N // clasamane C // IA *vs* 1 HTCL.
1008 // N // clasamane D // IA *vs* 1 HTCL.
1009 // N // clasamane E // IA *vs* 1 HTCL.

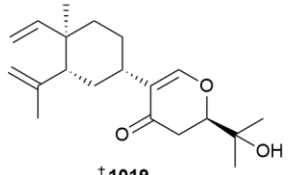
418 Cnidaria *Duva florida* // Ireland // Tuaimenals B–H, merosesquiterpenes from the Irish deep-sea soft coral *Duva florida* with bioactivity against cervical cancer cell lines
1010 // N // tuaimenal B // IA *vs* 2 HTCLs.
1011 // N // tuaimenal C // NT.
1012 // N // tuaimenal D // NT.
1013 // N // tuaimenal E // NT.
1014 // N // tuaimenal F // IA vs 2 HTCLs.
1015 // N // tuaimenal G // pot. cytotox. *vs* HPV-negative cervical HTCL; IA *vs* HPV-positive CaSki HTCL.
1016 // N // tuaimenal H // IA *vs* 2 HTCLs.



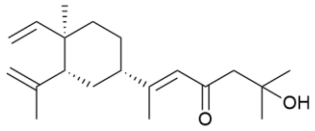
†1017



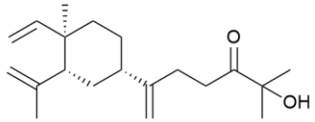
†1018



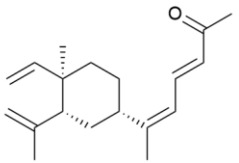
†1019



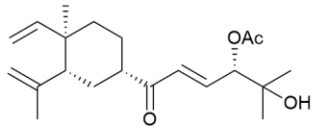
†1020



†1021

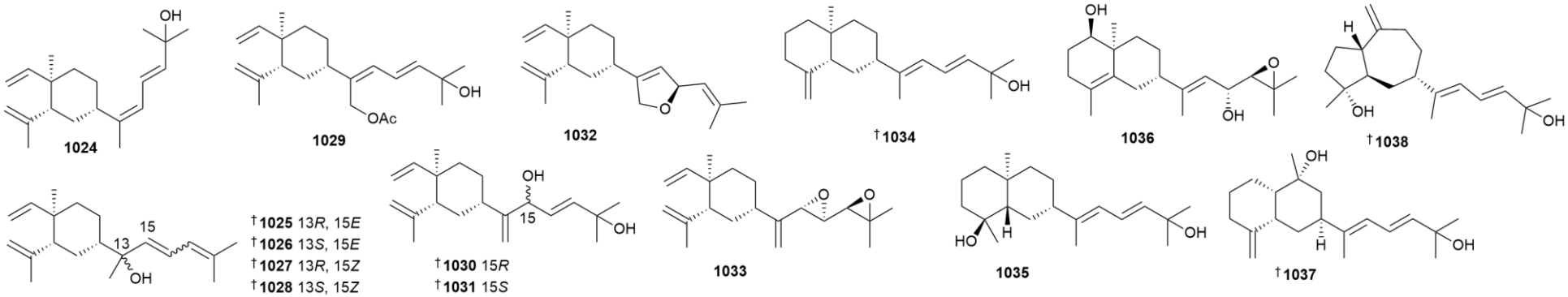


†1022

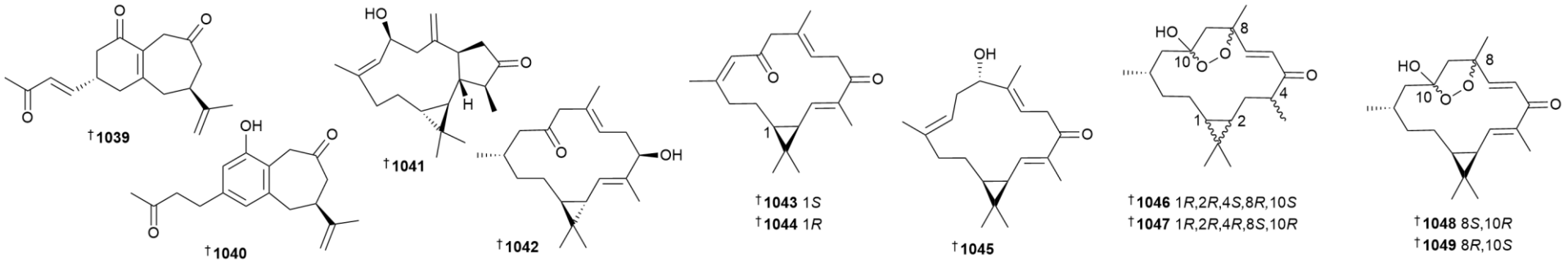


†1023

419 Cnidaria *Lobophytum catalai* // Xisha Is., YaGong Is., China // Seven new lobane diterpenoids from the soft coral *Lobophytum catalai*
1017 // N // lobocatalen A // IA *vs* anti-inflam.; IA *vs* 3 HTCLs.
1018 // N // lobocatalen B // IA *vs* anti-inflam.; IA *vs* 3 HTCLs.
1019 // N // lobocatalen C // IA *vs* anti-inflam.; IA *vs* 4 HTCLs.
1020 // N // lobocatalen D // IA *vs* anti-inflam.; IA *vs* 4 HTCLs.
1021 // N // lobocatalen E // IA *vs* anti-inflam.; IA *vs* 1 HTCL.
1022 // N // lobocatalen F // IA *vs* anti-inflam.; IA *vs* 1 HTCL.
1023 // N // lobocatalen G // IA *vs* anti-inflam.; IA *vs* 4 HTCLs.

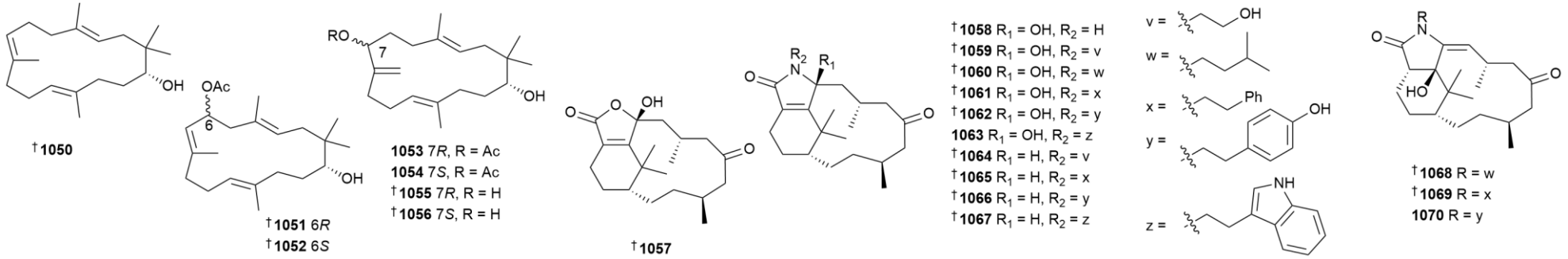


420 Cnidaria *Klyxum molle* // Xisha Is., Hainan Province, China // New antibacterial diterpenoids from the South China Sea soft coral *Klyxum molle*
1024 // N // xishaklyane A // IA to weak activ. *vs* 5 bact. strains.
1025 // N // xishaklyane B // IA to weak activ. *vs* 5 bact. strains.
1026 // N // xishaklyane C // IA to weak activ. *vs* 5 bact. strains.
1027 // N // xishaklyane D // IA to weak activ. *vs* 5 bact. strains.
1028 // N // xishaklyane E // IA to weak activ. *vs* 5 bact. strains.
1029 // N // xishaklyane F // IA *vs* 5 bact. strains.
1030 // N // xishaklyane G // NT.
1031 // N // xishaklyane H // NT.
1032 // N // xishaklyane I // NT.
1033 // N // xishaklyane J // IA *vs* 5 bact. strains.
1034 // N // xishaklyane K // IA to mod. activ. *vs* 5 bact. strains.
1035 // N // xishaklyane L // NT.
1036 // N // xishaklyane M // NT.
1037 // N // xishaklyane N // NT.
1038 // N // xishaklyane O // NT.



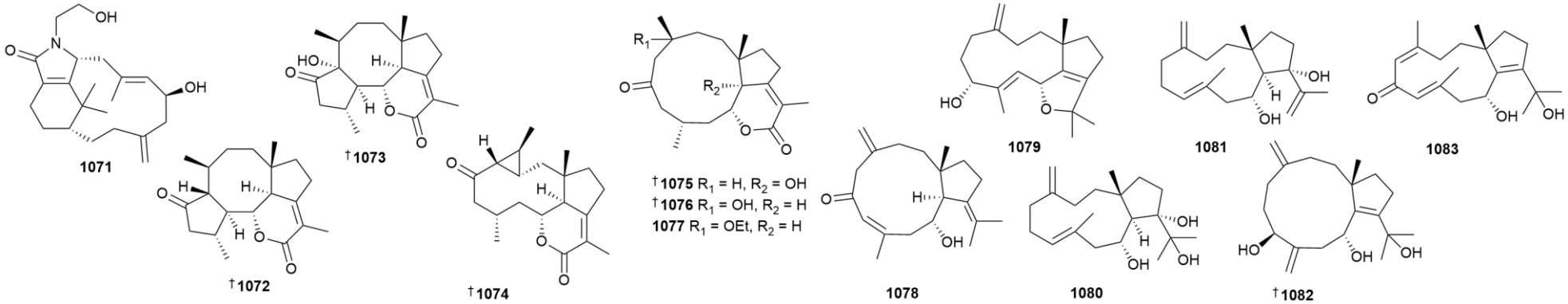
412 Cnidaria *Sinularia scabra* // Xisha Is., China // Discovery of uncommon terpenoids from the South China Sea soft coral *Sinularia scabra*
1039 // N // sinulatone A // IA *vs* inhib. osteoclast assay; IA *vs* 2 HTCLs.
1040 // N // sinulatone B // weak inhib. osteoclast assay; IA *vs* 2 HTCLs.

421 Cnidaria *Sinularia nanolobata* // Ximao Is., Hainan province, China, // Nanolobatone A, an unprecedented diterpenoid and related new casbanoids from the Hainan soft coral *Sinularia nanolobata*
1041 // N // nanolobatone A // XRD; IA *vs* 4 bact. strains.
1042 // N // nanolobatone B // XRD; IA *vs* 4 bact. strains.
1043 // N // nanolobatone C // IA *vs* 4 bact. strains.
1044 // N // nanolobatone D // aka *ent*-sinucrassin I; IA *vs* 4 bact. strains.
1045 // N // nanolobatone E // IA *vs* 4 bact. strains.
1046 // N // nanolobaperoxide A // XRD; IA *vs* 4 bact. strains.
1047 // N // nanolobaperoxide B // IA *vs* 4 bact. strains.
1048 // N // nanolobaperoxide C // IA *vs* 4 bact. strains.
1049 // N // nanolobaperoxide D // IA *vs* 4 bact. strains.



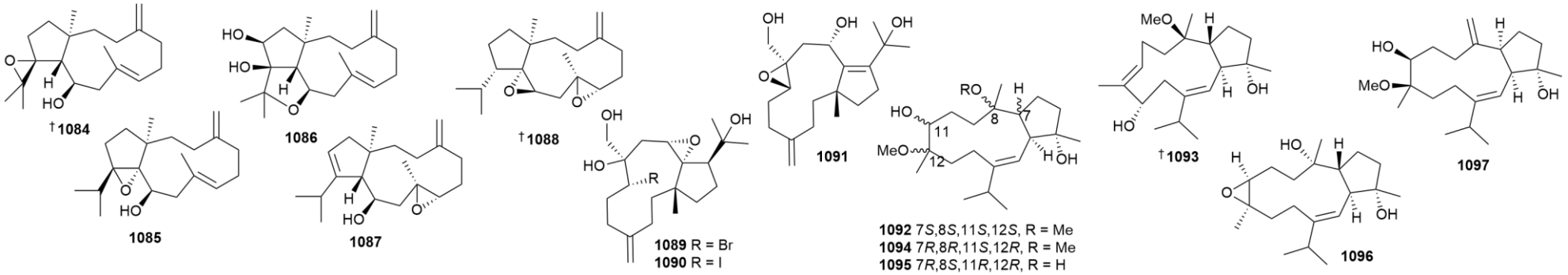
422 Cnidaria *Paralemnalia thyrsoides* // Green Is., Taiwan // Paraflexinols A−G, rare flexibilane-based diterpenoids from the soft coral *Paralemnalia thyrsoides*
1050 // N // paraflexinol A // NT.
1051 // N // paraflexinol B // NT.
1052 // N // paraflexinol C // NT.
1053 // A // paraflexinol D // NT.
1054 // A // paraflexinol E // NT.
1055 // N // paraflexinol E // NT.
1056 // N // paraflexinol F // NT.

423 Cnidaria *Heteroxenia ghardaqensis* // Xisha Is., China // Heterolactone and heterolactams A–M, verticillane diterpenoids with anti-inflammatory and hepatoprotective activities from the soft coral *Heteroxenia ghardaqensis*
1057 // N // heterolactone // XRD; NT.
1058 // N // heterolactam A // XRD; IA *vs* hepatoprotection.
1059 // N // heterolactam B // NT.
1060 // N // heterolactam C // XRD; NT.
1061 // N // heterolactam D // IA *vs* anti-inflam.
1062 // N // heterolactam E // NT.
1063 // N // heterolactam F // NT.
1064 // N // heterolactam G // XRD; IA *vs* anti-inflam.
1065 // N // heterolactam H // XRD; NT.
1066 // N // heterolactam I // NT.
1067 // N // heterolactam J // NT.
1068 // N // heterolactam K // XRD; IA *vs* hepatoprotection.
1069 // N // heterolactam L // XRD; NT.
1070 // N // heterolactam M // NT.



415 Cnidaria *Cespitularia* sp // Green Is., Taiwan // New verticillene diterpenoids, eudesmane sesquiterpenoids, and hydroperoxysteroids from the further chemical investigation of a Taiwanese soft coral *Cespitularia* sp.
1071 // N // cespitulactam M // IA *vs* 3 HTCLs; IA *vs* anti-inflam.

424 Cnidaria *Clavularia viridis* // Yongxing Is., Xisha, South China // Targeted isolation of dolabellane diterpenoids from the soft coral *Clavularia viridis* using molecular networking
1072 // N // clavirolide J // XRD; IA *vs* 6 HTCLs; IA *vs* HIV-1; IA *vs* RT.
1073 // N // clavirolide K // XRD; IA *vs* 6 HTCLs; IA *vs* HIV-1; IA *vs* RT.
1074 // N // clavirolide L // IA *vs* 6 HTCLs; weak inhib. HIV-1; IA *vs* RT.
1075 // N // clavirolide M // XRD; IA *vs* 6 HTCLs; IA *vs* HIV-1; IA *vs* RT.
1076 // N // clavirolide N // XRD; IA *vs* 6 HTCLs; IA *vs* HIV-1; IA *vs* RT.
1077 // A // clavirolide O // IA *vs* 6 HTCLs; IA *vs* HIV-1; IA *vs* RT.
1078 // N // clavirolide P // NT.
1079 // N // clavirolide Q // NT.
1080 // N // clavirolide R // 12-epi-clavurol F; IA *vs* 6 HTCLs; IA *vs* RT.
1081 // N // clavirolide S // IA *vs* 6 HTCLs; IA *vs* 1 virus strain; IA *vs* RT.
1082 // N // clavirolide T // XRD; IA *vs* 6 HTCLs; IA *vs* 1 virus strain; IA *vs* RT.
1083 // N // clavirolide U // IA *vs* 6 HTCLs; IA *vs* 1 virus strain; IA *vs* RT.



425 Cnidaria *Clavularia viridis* // Xisha Is., Hainan Province, China // Extending the record of dolabellane-type diterpenoids from the soft coral *Clavularia viridis*: structures and stereochemistry

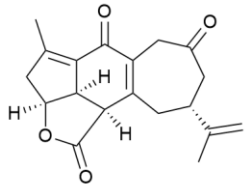
1084 // N // clavusin A // XRD; IA *vs* 1 murine TCL and 1 HTCL; IA *vs* PTP1B.
1085 // N // clavusin B // IA *vs* 1 murine TCL and 1 HTCL; IA *vs* PTP1B.
1086 // N // clavusin C // IA *vs* 1 murine TCL and 1 HTCL; IA *vs* PTP1B.
1087 // N // clavusin D // IA *vs* 1 murine TCL and 1 HTCL; IA *vs* PTP1B.
1088 // N // clavusin E // XRD; IA *vs* 1 murine TCL and 1 HTCL; IA *vs* PTP1B.

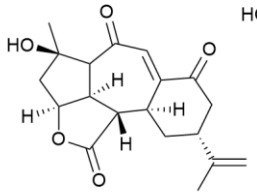
417 Cnidaria *Clavularia* sp // Green Is., Taiwan // Chemical constituents from soft coral *Clavularia* spp. demonstrate antiproliferative effects on oral cancer cells

1089 // N // clabellane A // IA *vs* 1 HTCL.
1090 // N // clabellane B // IA *vs* 1 HTCL.
1091 // N // clabellane C // IA *vs* 1 HTCL.

426 Cnidaria *Sarcophyton crassocaule* // Nansha Is., Hainan Province, China // Six undescribed capnosane-type macrocyclic diterpenoids from South China Sea soft coral *Sarcophyton crassocaule*: structural determination and biological evaluation

1092 // N // sarcocrassolin A // IA *vs* 5 HTCLs; IA *vs* anti-inflam.
1093 // N // sarcocrassolin B // XRD; IA *vs* 5 HTCLs; IA *vs* anti-inflam.
1094 // N // sarcocrassolin C // IA *vs* 5 HTCLs; IA *vs* anti-inflam.
1095 // N // sarcocrassolin D // IA *vs* 5 HTCLs; IA *vs* anti-inflam.
1096 // N // sarcocrassolin E // IA *vs* 5 HTCLs; IA *vs* anti-inflam.
1097 // N // sarcocrassolin F // IA *vs* 5 HTCLs; IA *vs* anti-inflam.


†**1098**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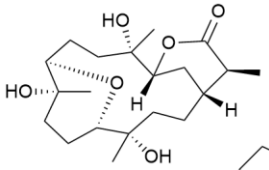
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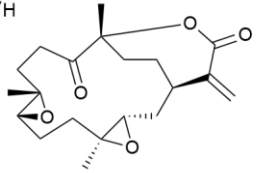
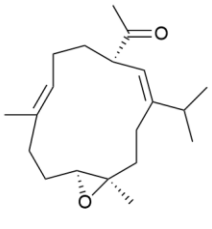
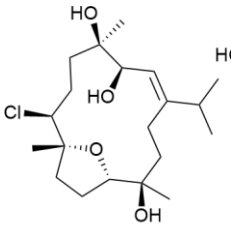
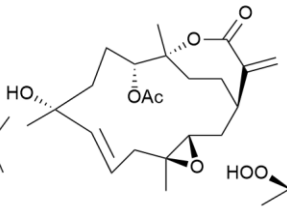

†**1101**


†**1102**


†**1103**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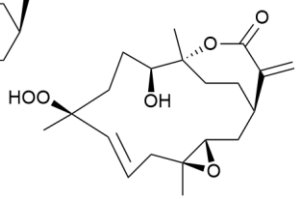

1105

429 Cnidaria *Sinularia* sp // Ximao Is., Hainan Province, China // Yonarolide A, an unprecedented furanobutenolide-containing norcembranoid derivative formed by photoinduced intramolecular [2+2] cycloaddition
1098 // R // yonarolide // NT; XRD.
1099 // R // scabrolide B // NT; XRD; aka sinuscalide D.

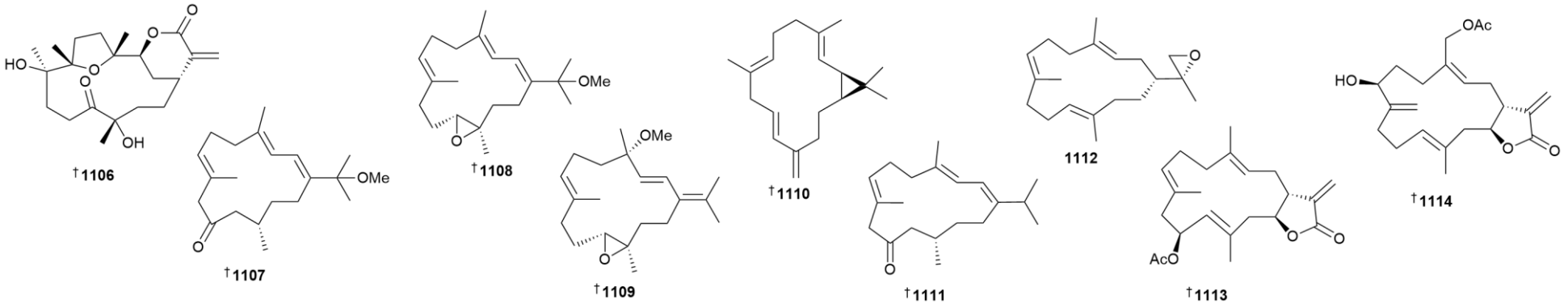
432 Cnidaria *Sinularia flexibilis* // Yalong Bay, Sanya, China // Antifouling activity of terpenoids from the corals *Sinularia flexibilis* and *Muricella* sp. against the bryozoan *Bugula neritina*
1100 // N // sinulaflexiolide Q // IA *vs* anti-fouling.

433 Cnidaria *Sinularia pendunculata* // Ximao Is., Hainan Province, China // The discovery and anti-colorectal cancer activities of cembranolides from the South China Sea soft coral *Sinularia pendunculata*
1101 // N // sinupendunculide A // XRD; IA *vs* 1 HTCL.

434 Cnidaria *Sinularia* sp // Turtle Is., Yilan County, Taiwan // Sinulariaone A: a novel diterpenoid with a 13-membered carbocyclic skeleton from an octocoral *Sinularia* species
1102 // N // sinulariaone A // XRD; IA *vs* 2 HTCLs.
1103 // R // chlorofurancembranoid B // XRD; NT.

435 Cnidaria *Sinularia querciformis* // Southern Taiwan // Anti-inflammatory cembrane-based diterpenoids isolated from the octocoral *Sinularia querciformis*
1104 // N // querciformolide G // weak anti-inflam.
1105 // N // querciformolide H // IA *vs* anti-inflam.

7 Cnidarians



436 Cnidaria *Sinularia flexibilis* // * // Flexibanone, the first cembranoid possessing an α-methylene-δ-lactone linking with a tetrahydronfuran ring by C-3/C-4 single bond, from the soft coral *Sinularia flexibilis*

1106 // N // flexibanone // IA *vs* 3 HTCLs.

437 Cnidaria *Sinularia nanolobata* // Ximao Is., Hainan Province, China // Four new diterpenoids from the South China Sea soft coral *Sinularia nanolobata* and DFT-based structure elucidation

1107 // N // 12α-methyl-1*E*,3*E*,7*E*-cembratrien-10-one // IA *vs* 5 HTCLs.

1108 // N // 15-methoxyl-11,12-epoxy-1E,3E,7E-cembratrien // IA *vs* 5 HTCLs.

1109 // N // 4α-methoxyl-11,12-epoxy-1,2E,7E-cembratrien // IA *vs* 5 HTCLs.

1110 // N // 2E,7E,10E,12-casbatetraen // IA *vs* 5 HTCLs.

436 Cnidaria *Sinularia tumulosa* // Lingshui Bay, Hainan Province, China // Oxygenated cembrane diterpenes from the South China Sea soft coral *Sinularia tumulosa*

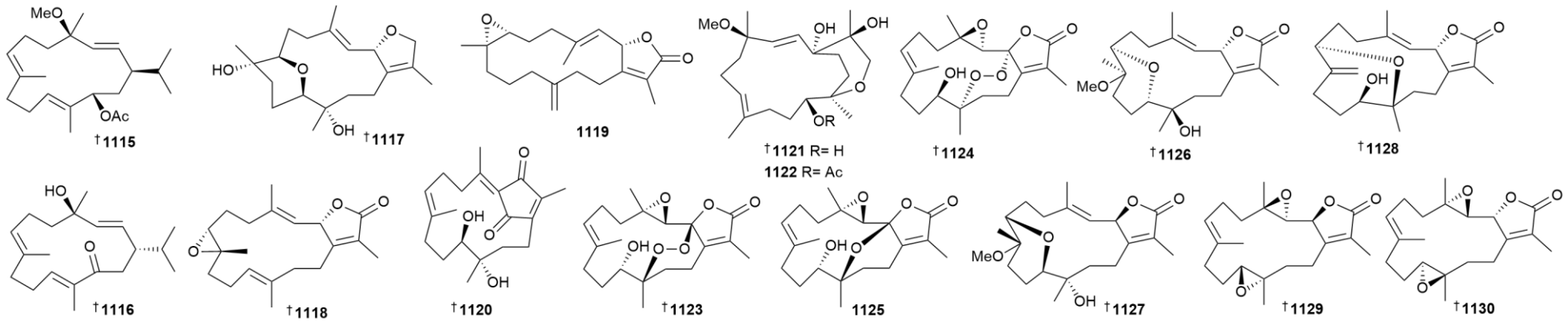
1111 // N // situmulin A // IA *vs* 8 bact. strains.

1112 // N // situmulin B // IA *vs* 8 bact. strains.

437 Cnidaria *Lobophytum* sp // Ximao Is., Hainan Province, China // Antitumor cembrane diterpenoids from the South China Sea soft coral *Lobophytum* sp.

1113 // N // ximaolobophytolide A // IA *vs* 1 HTCL.

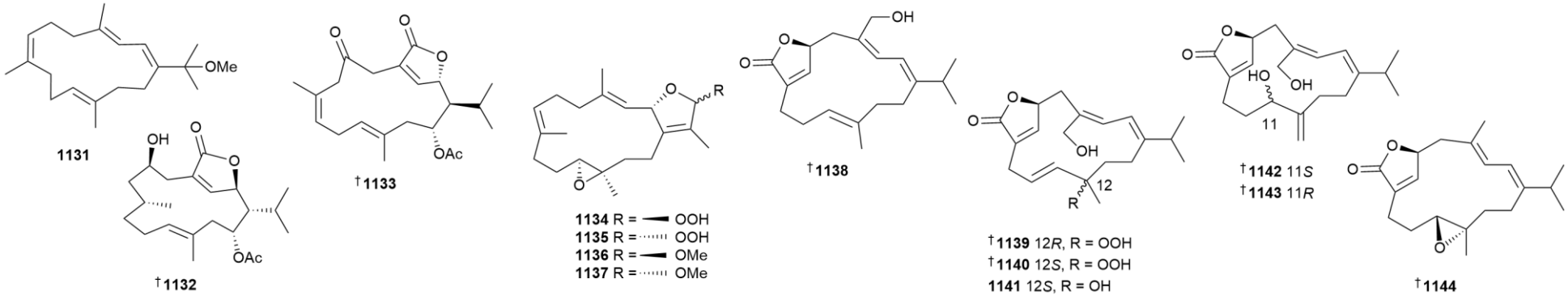
1114 // N // ximaolobophytolide B // NT.



440 Cnidaria *Sarcophyton trocheliophorum* // Xisha Is., China // Four new cembranoids from the South China Sea soft coral *Sarcophyton trocheliophorum*
1115 // N // 1,13-di-*epi*-13-acetoxy launine P // IA *vs* 2 bact. strains; IA *vs* 1 virus strain.
1116 // N // 13-oxo-thunbergol // IA *vs* 2 bact. strains; IA *vs* 1 virus strain.
1117 // N // isocrassumol B // IA *vs* 2 bact. strains; IA *vs* 1 virus strain.
1118 // N // 7α,8α-sarcophine // IA *vs* 2 bact. strains; IA *vs* 1 virus strain.

410 Cnidaria *Sarcophyton glaucum* // Jeddah, Saudi Arabia // Cembranoids from the Red Sea soft coral *Sarcophyton glaucum* protect against indomethacin-induced gastric injury
1119 // N // $\Delta^{12(20)}$-sarcophine // Active *in vivo* against rat gastric injury.

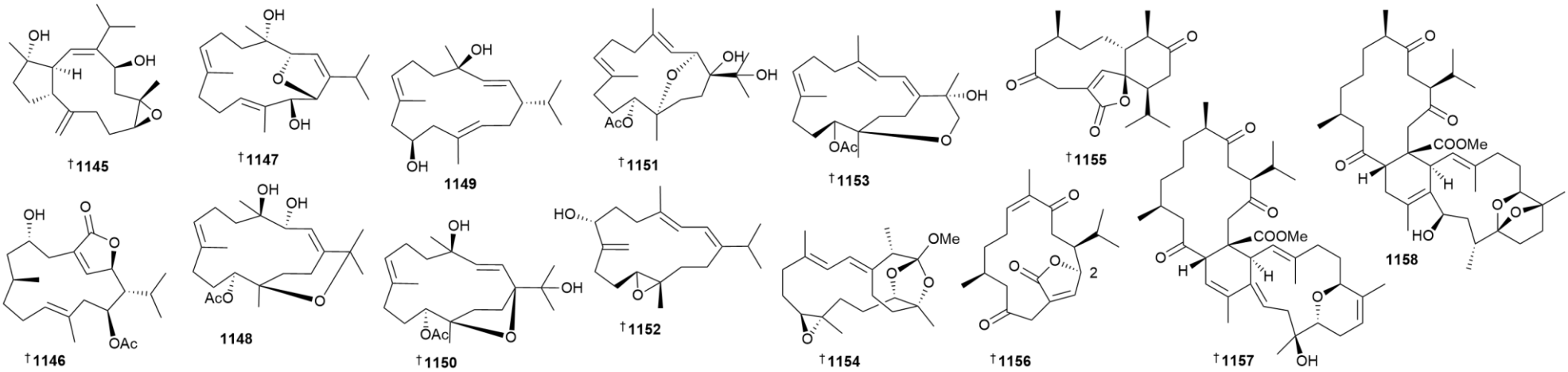
441 Cnidaria *Sarcophyton elegans* // YaGong Is., Xisha Is., China // Sarcoelegans A–H, eight undescribed cembranes with anti-inflammatory and anti-thrombotic activities from the South China Sea soft coral *Sarcophyton elegans*
1120 // N // sarcoelegan A // XRD; IA *vs* anti-inflam.
1121 // N // sarcoelegan B // IA *vs* anti-inflam.; IA *vs* thrombosis.
1122 // N // sarcoelegan C // IA *vs* anti-inflam.; IA *vs* thrombosis.
1123 // N // (+)-sarcoelegan D // XRD of racemate; IA *vs* anti-inflam.
1124 // N // (–)-sarcoelegan D // XRD of racemate; IA *vs* anti-inflam.
1125 // N // sarcoelegan E // IA *vs* anti-inflam.
1126 // N // (+)-sarcoelegan F // XRD of racemate; IA *vs* anti-inflam.
1127 // N // (–)-sarcoelegan F // XRD of racemate; IA *vs* anti-inflam.
1128 // N // sarcoelegan G // IA *vs* anti-inflam.
1129 // N // (+)-sarcoelegan H // XRD of racemate; IA *vs* anti-inflam.
1130 // N // (–)-sarcoelegan H // XRD of racemate; IA *vs* anti-inflam.



442 Cnidaria *Sarcophyton* sp // Xisha Is., China // Three new cembranoids from a Xisha soft coral *Sarcophyton* sp.
1131 // N // sarcophynoid A // IA *vs* 3 bact. strains.
1132 // N // sarcophynoid B // IA *vs* 3 bact. strains.
1133 // N // sarcophynoid C // IA *vs* 3 bact. strains.

443 Cnidaria *Sarcophyton cinereum* // Xiao Liuqiu Is., Taiwan // Isosarcophytoxide derivatives with a 2,5-dihydrofuran moiety from the soft coral *Sarcophyton cinereum*
1134 // N // 16α-hydroperoxyisosarcophytoxide // IA *vs* 2 HTCLs; IA *vs* immunosuppression.
1135 // N // 16β-hydroperoxyisosarcophytoxide // IA *vs* 2 HTCLs; IA *vs* immunosuppression.
1136 // N // 16α-methoxyisosarcophytoxide // IA *vs* 2 HTCLs; IA *vs* immunosuppression.
1137 // N // 16β-methoxyisosarcophytoxide // IA *vs* 2 HTCLs; IA *vs* immunosuppression.

444 Cnidaria *Sarcophyton ehrenbergi* // Weizhou Is., Guangxi province, China // Further undescribed cembranoids from South China Sea soft coral *Sarcophyton ehrenbergi*: structural elucidation and biological evaluation
1138 // N // isoehrenbergol D // IA *vs* TNF-α.
1139 // N // sarcoehrenolide F // XRD; IA *vs* TNF-α.
1140 // N // sarcoehrenolide G // XRD; IA *vs* TNF-α.
1141 // N // sarcoehrenolide H // IA *vs* TNF-α.
1142 // N // sarcoehrenolide I // IA *vs* TNF-α.
1143 // N // sarcoehrenolide J // IA *vs* TNF-α.
1144 // N // sarcoehrenolide K // IA *vs* TNF-α.

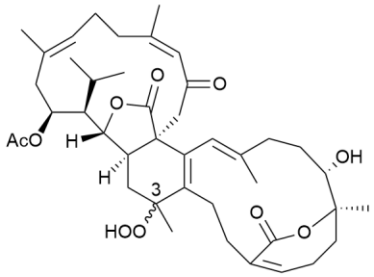


445 Cnidaria *Sarcophyton trocheliophorum* // Ximao Is., Hainan Province, China // Structurally diverse diterpenes from the South China Sea soft coral *Sarcophyton trocheliophorum*
1145 // N // sartrocheliol A // XRD. IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
1146 // N // sartrocheliol B // IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
1147 // N // sartrocheliol C // IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
1148 // N // sartrocheliol D // IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
1149 // N // sartrocheliol E // IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.
1150 // N // sartrocheliol F // IA *vs* 4 HTCLs; IA *vs* 14 bact. strains; IA *vs* 1 fungal strain.

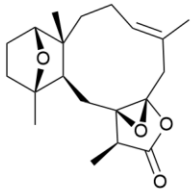
446 Cnidaria *Sarcophyton mililatensis* // Xigu Is., China // Extending the record of terpenes from soft coral *Sarcophyton mililatensis*
1151 // N // sarcomililatol H // IA *vs* TNF-α.

447 Cnidaria *Sarcophyton boettgeri* // Weizhou Is., Guangxi Zhuang, China // Two new cembranoids from the Chinese soft coral *Sarcophyton boettgeri*
1152 // N // sarcoboettgerol D // IA *vs* 4 HTCLs; IA *vs* 16 bact. strains.
1153 // N // sarcoboettgerol E // IA *vs* 4 HTCLs; IA *vs* 16 bact. strains.

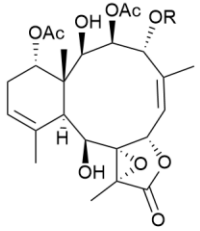
448 Cnidaria *Sarcophyton tortuosum* // Ximao Is., Hainan Province, China // Guided isolation of an uncommon cembranoid orthoester, sarcotortin A, and three skeletal diverse terpenoids from the Hainan soft coral *Sarcophyton tortuosum* based on molecular networking strategy
1154 // N // sarcotortin A // XRD; IA *vs* PTP1B; IA *vs* anti-inflam.; IA *vs* 4 HTCLs.
1155 // N // sarcotorolide A // XRD; IA *vs* PTP1B; IA *vs* anti-inflam.; IA *vs* 4 HTCLs.
1156 // R // sarcostolide G // XRD; IA *vs* PTP1B; IA *vs* anti-inflam.; IA *vs* 4 HTCLs.
1157 // N // ximaolide M // XRD.; weak inhib. PTP1B.
1158 // N // ximaolide N // IA *vs* PTP1B; IA *vs* anti-inflam.; IA *vs* 4 HTCLs.



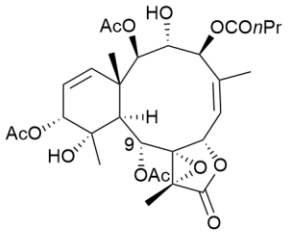
1159 3*S*
1160 3*R*



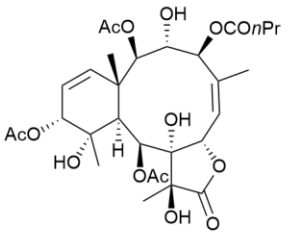
1161



1163 R = CO*n*Pr
1164 R = Ac



1166



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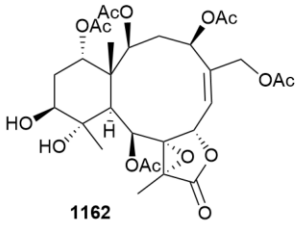
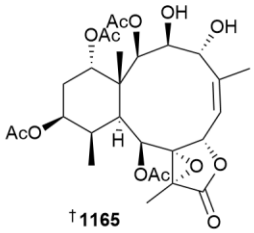
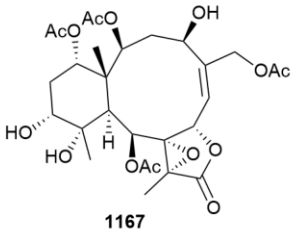


1162



†**1165**



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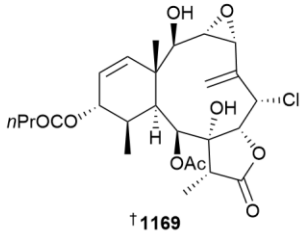


†**1169**

449 Cnidaria *Sarcophyton trocheliophorum* // * // Unprecedented anti-inflammatory biscembranoids with 3-hydroperoxy-3-methylcyclohex-1-ene moiety isolated from aquaculture *Sarcophyton trocheliophorum*
1159 // N // sarcotroxide A // IA *vs* anti-inflam.
1160 // N // sarcotroxide B // weak inhib. superoxide release.

453 Cnidaria *Briareum violaceum* // * // Briavioid D, a rare 7β,8β-epoxybriarane from *Briareum violaceum*
1161 // N // briavioid D // IA *vs* anti-inflam.

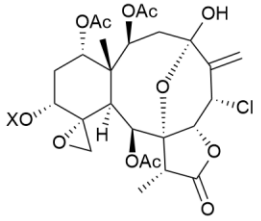
454 Cnidaria *Briareum violaceum* // * // Briavioids E–G, newly isolated briarane-diterpenoids from a cultured octocoral *Briareum violaceum*
1162 // N // briavioid E // IA *vs* anti-inflam.
1163 // N // briavioid F // IA *vs* anti-inflam.
1164 // N // briavioid G // NT.
1165 // R // briavioid A // XRD; NT.

455 Cnidaria *Pachyclavularia violacea*, *Briareum violacea* // Apogama, Kunigami, Okinawa, Japan // A new briarane diterpene, briarlide S from Okinawan soft coral *Pachyclavularia violacea*
1166 // N // briarlide S // IA *vs* 1 bact. strain; IA *vs* brine shrimp.

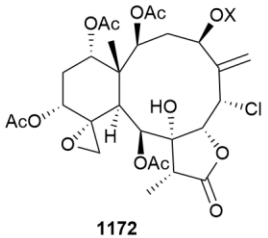
456 Cnidaria *Briareum stechei* // Haikou, Pingtung County, Taiwan // 12-*epi*-Briacavatolide B, a new briarane diterpenoid from the octocoral *Briareum stechei*
1167 // N // 12-*epi*-briacavatolide B // IA *vs* anti-inflam.; IA as macrophage cytotoxin.

457 Cnidaria *Briareum stechei* // Ie Is., Okinawa, Japan // Briastecholide M, a new polyoxygenated briarane from *Briareum stechei*
1168 // N // briastecholide M // IA *vs* anti-inflam.

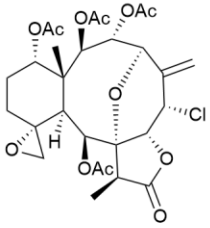
458 Cnidaria *Briareum stechei* // * // Briastecholide N: a new chlorine-containing briarane diterpenoid deriving from cultured *Briareum stechei*
1169 // N // briastecholide N // XRD; enhanced alkaline phosphatase activity.



†1170



1172



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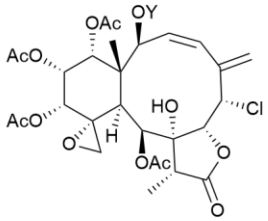
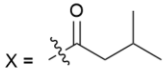
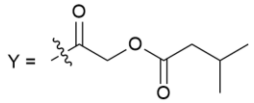
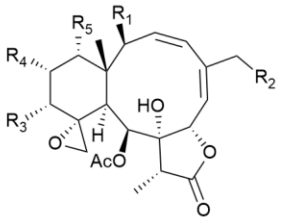


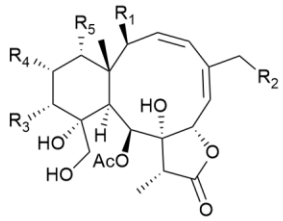
1173





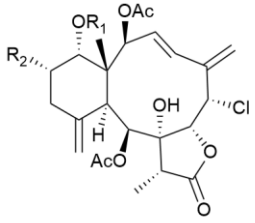


†**1174** $R_1 = R_5 = OAc$, $R_2 = Cl$, $R_3 = OX$, $R_4 = H$
1175 $R_1 = R_3 = OAc$, $R_2 = Cl$, $R_5 = OX$, $R_4 = H$
1176 $R_1 = R_5 = OAc$, $R_2 = R_3 = OX$, $R_4 = H$
1177 $R_1 = R_5 = OAc$, $R_2 = OEt$, $R_3 = OX$, $R_4 = H$
1178 $R_1 = R_3 = OAc$, $R_2 = OEt$, $R_4 = H$, $R_5 = OX$
1179 $R_1 = OY$, $R_2 = OEt$, $R_3 = OX$, $R_4 = R_5 = OAc$
1180 $R_1 = R_3 = R_5 = OAc$, $R_2 =$OEt, $R_4 = H$
1181 $R_1 = R_5 = OAc$, $R_2 = OH$, $R_3 = OX$, $R_4 = H$
1182 $R_1 = R_3 = R_5 = OAc$, $R_2 =$OH, $R_4 = H$

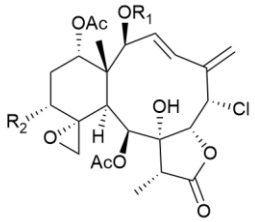


1183 $R_1 = OY$, $R_2 = OH$, $R_3 = OX$, $R_4 = R_5 = OAc$
1184 $R_1 = R_4 = R_5 = OAc$, $R_2 = OH$, $R_3 = OX$
1185 $R_1 = OY$, $R_2 = OH$, $R_3 = R_4 = H$, $R_5 = OAc$

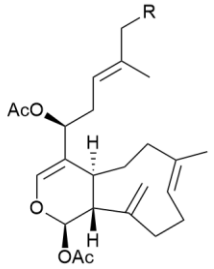
459 Cnidaria *Junceella juncea* // South China Sea // Briarane-type diterpenoids, the inhibitors of osteoclast formation by interrupting Keap1-Nrf2 interaction and activating Nrf2 pathway
1170 // N // juncelactone A // XRD; IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1171 // N // juncelactone B // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1172 // N // juncelactone C // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1173 // N // juncelactone D // NT.
1174 // N // juncelactone E // XRD; IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1175 // N // juncelactone F // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1176 // N // juncelactone G // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1177 // N // juncelactone H // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1178 // N // juncelactone I // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1179 // N // juncelactone J // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1180 // N // juncelactone K // Weak anti-osteoclastogenic activity; IA cytotox. vs BMM cells.
1181 // N // juncelactone L // Weak cytotox. *vs* BMM cells.
1182 // N // juncelactone M // Weak cytotox. *vs* BMM cells.
1183 // N // juncelactone N // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1184 // N // juncelactone O // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.
1185 // N // juncelactone P // IA inhib. osteoclastogenic activity; IA cytotox. *vs* BMM cells.



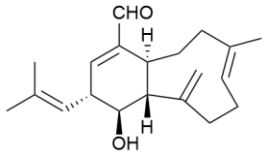
1186 R_1 = H, R_2 = OAc
†**1187** R_1 = Ac, R_2 = OAc
1189 R_1 = Ac, R_2 = H



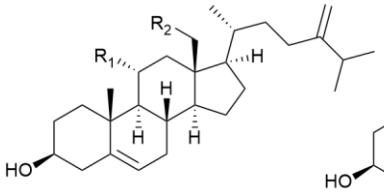
†**1188** R_1 = CO*n*Pr, R_2 = OAc
1190 R_1 = Ac, R_2 = H



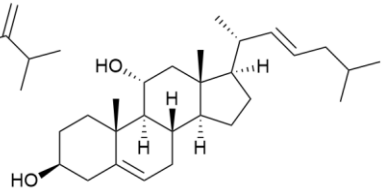
†**1191** R = OAc
†**1192** R = H



†**1193**



1194 R_1 = H, R_2 = OH
1195 R_1 = H, R_2 = OAc
1196 R_1 = OH, R_2 = H

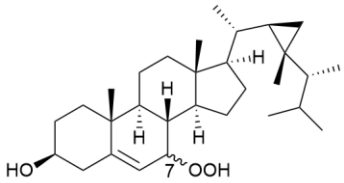


1197

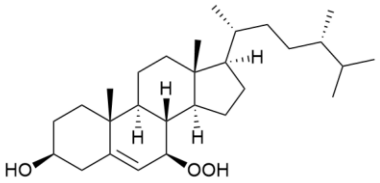
460 Cnidaria *Junceella fragilis* // South Taiwan // S-cis-Δ3(E),5(16)-conjugated diene briaranes from the octocoral *Junceella fragilis*
1186 // N // fragilide Y // IA *vs* anti-inflamm.
1187 // R // (-)-frajunolide H // XRD; revised diene moiety from *s-trans* to *s-cis;* IA *vs* anti-inflam.
1188 // R // fragilide P // XRD; revised diene moiety from *s-trans* to *s-cis;* IA *vs* anti-inflam.
1189 // R // junceellolide B // revised diene moiety from *s-trans* to *s-cis;* IA *vs* anti-inflam.
1190 // R // junceellolide C // revised diene moiety from *s-trans* to *s-cis;* IA *vs* anti-inflam.

461 * // * // Total syntheses of (+)-waixenicin A, (+)-9-deacetoxy-14,15-deepoxyxeniculin, and (−)-xeniafaraunol A
1191 // R // (+)-waixenicin // total synth. achieved.
1192 // R // (+)-9-deacetoxy-14,15-deepoxyxeniculin // total synth. achieved.
1193 // R // xeniafaraunol A // total synth. achieved.

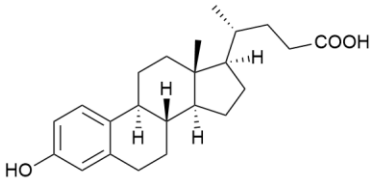
464 Cnidaria *Sinularia depressa* // Xisha Is., Hainan Province, China // Sinulasterols D–G, four new antibacterial steroids from the South China sea soft coral *Sinularia depressa*
1194 // N // sinulasterol D // IA *vs* anti-inflam.; IA *vs* 3 bact. strains.
1195 // N // sinulasterol E // IA *vs* anti-inflam.; IA *vs* 3 bact. strains.
1196 // N // sinulasterol F // IA *vs* anti-inflam.; IA *vs* 3 bact. strains.
1197 // N // sinulasterol G // IA *vs* anti-inflam.; IA *vs* 3 bact. strains.



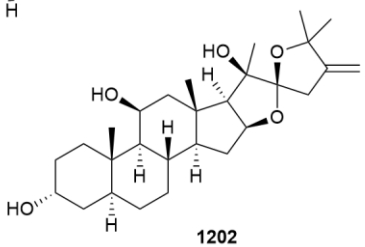
1198 7*R*
1199 7*S*



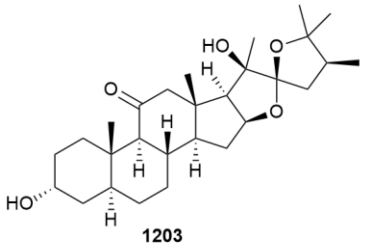
1200



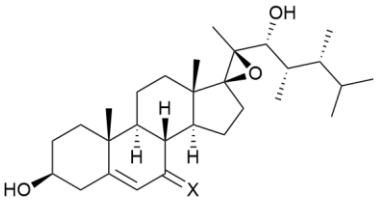
†**1201**



1202



1203



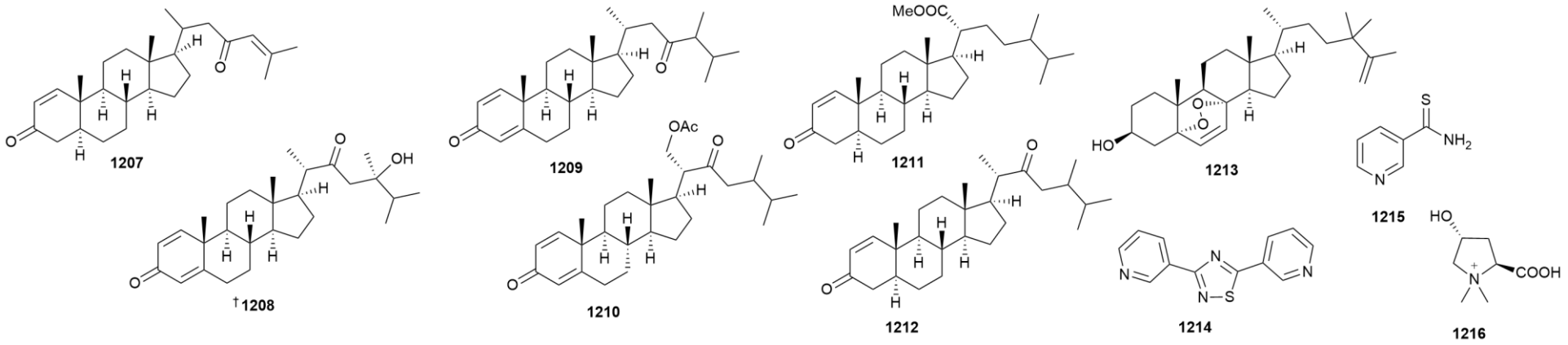
1204 X = O
1205 X = H, ····OOH
1206 X = H, —OOH

415 Cnidaria *Cespitularia* sp // Green Is., Taiwan // New verticillene diterpenoids, eudesmane sesquiterpenoids, and hydroperoxysteroids from the further chemical investigation of a Taiwanese soft coral *Cespitularia* sp.
1198 // N // 7β-hydroperoxygorgosterol // IA *vs* anti-inflam.; IA *vs* 10 bact. strains; IA *vs* 3 HTCLs.
1199 // N // 7α-hydroperoxygorgosterol // IA *vs* anti-inflam.; IA *vs* 10 bact. strains; IA *vs* 3 HTCLs.
1200 // N // 7β-hydroperoxycampesterol // IA *vs* anti-inflam.; IA *vs* 10 bact. strains; IA *vs* 3 HTCLs.

418 Cnidaria *Duva florida* // Ireland // Tuaimenals B–H, merosesquiterpenes from the Irish deep-sea soft coral *Duva florida* with bioactivity against cervical cancer cell lines
1201 // R // 3-hydroxy-19-norchola-1,3,5^{10}-trien-24-oic acid // XRD; NT.

465 Cnidaria *Isis hippuris* // Orchid Is. (Lanyu), Taitung County, Taiwan // 24-Dehydrohippuristanol, a cytotoxic spiroketal steroid from *Isis hippuris*
1202 // N // 24-dehydrohippuristanol // weak cytotox. *vs* 2 HTCLs.
1203 // M // hippuristanol-11-one // previously reported as synthetic intermediate; IA *vs* 2 HTCLs.

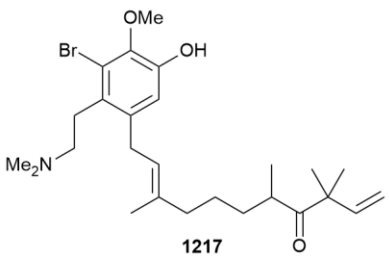
466 Cnidaria *Lobophytum sarcophytoides* // Ximao Is., Hainan Province, China // Anti-inflammatory steroids from the South China Sea soft coral *Lobophytum sarcophytoides*
1204 // N // 17β,20β-epoxy-23α,24α-dimethylcholest-5-ene-7-one-3β,22α-diol // IA *vs* anti-inflam.
1205 // N // 17β,20β-epoxy-7α-hydroperoxy-23α,24α-dimethylcholest-5-ene-3β,22α-diol // IA *vs* anti-inflam.
1206 // N // 17β,20β-epoxy-7β-hydroperoxy-23α,24α-dimethylcholest-5-ene-3β,22α-diol // IA *vs* anti-inflam.



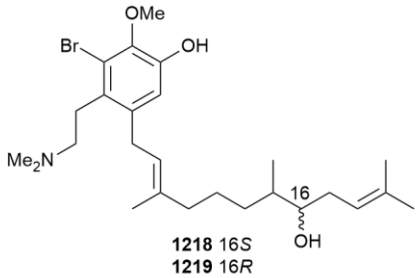
467 Cnidaria *Dendronephthya* sp // Jeddah city coast, Saudi Arabia // Cytotoxic ketosteroids from the Red Sea soft coral *Dendronephthya* sp.
1207 // N // dendronestadione // weak cytotox. *vs* 1 HTCL.

468 Cnidaria *Lobophytum* sp // Xuwen Country, Guangdong Province, China // Lobosteroids A–F: six new highly oxidized steroids from the Chinese soft coral *Lobophytum* sp.
1208 // N // lobosteroid A // XRD; IA to mod. activ. *vs* 9 bact. strains.
1209 // N // lobosteroid B // IA to mod. activ. *vs* 9 bact. strains.
1210 // N // lobosteroid C // IA to mod. activ. *vs* 9 bact. strains.
1211 // N // lobosteroid D // IA to mod. activ. *vs* 9 bact. strains.
1212 // N // lobosteroid E // IA to mod. activ. *vs* 9 bact. strains.
1213 // N // lobosteroid F // IA to mod. activ. *vs* 9 bact. strains.

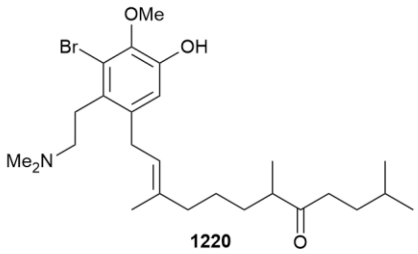
471 Cnidaria *Condylactis* sp // Tiao-Shi Reefs, Kenting, Taiwan // The invasive anemone *Condylactis* sp. of the coral reef as a source of sulfur- and nitrogen-containing metabolites and cytotoxic 5,8-epidioxy steroids
1214 // N // 3,5-bis(3-pyridinyl)-1,2,4-thiadiazole // IA *vs* 5 HTCLs.
1215 // N // thionicotinamide // IA *vs* 5 HTCLs.
1216 // M // (−)-betonicine // IA *vs* 5 HTCLs.



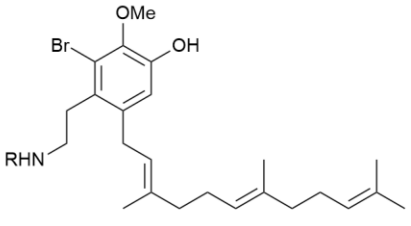
1217



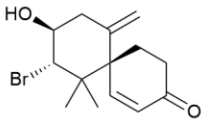
1218 16*S*
1219 16*R*



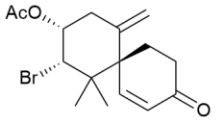
1220



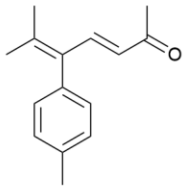
1221 R = Me
1222 R = Ac



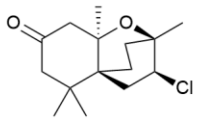
†**1223**



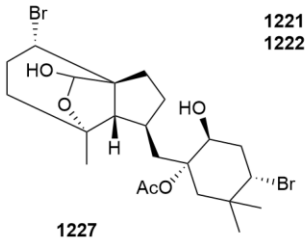
†**1224**



1225



†**1226**



1227

488 Mollusca *Aplysia kurodai* // Mie Prefecture, Japan // Discovery of new cytotoxic aplaminone derivatives from the sea hare *Aplysia kurodai* and elucidation of their accumulation from local sea algae through the food chain

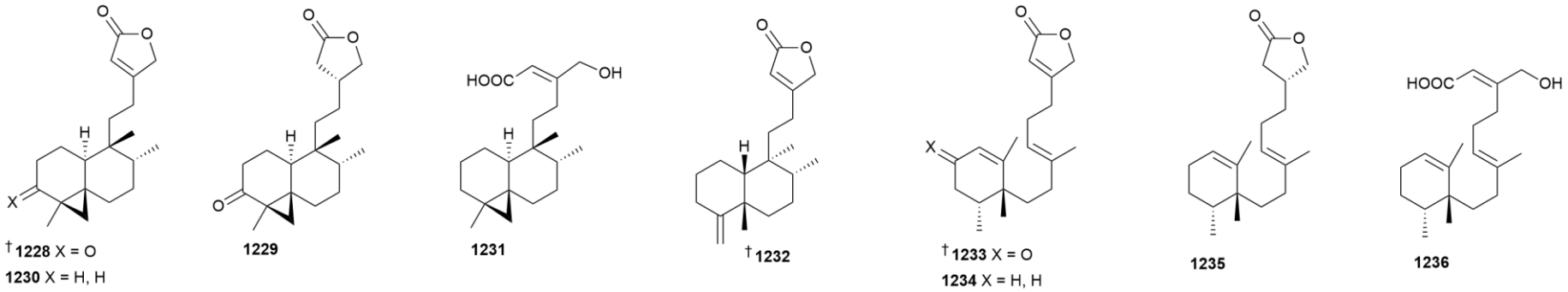
1217 // N // isoaplaminone // weak cytotox. *vs* 1 HTCL.
1218 // N // aplaminol A // mod. cytotox. *vs* 1 HTCL.
1219 // N // aplaminol B // weak cytotox. *vs* 1 HTCL.
1220 // N // dihydroaplaminone // mod. cytotox. *vs* 1 HTCL.
1221 // N // aplaminene // weak cytotox. *vs* 1 HTCL.
1222 // N // *N*-acetyl-*N*-demethylaplaminene // IA *vs* 1 HTCL.

489 Mollusca *Aplysia dactylomela* // Phu Quy Is., Binh Thuan province, Vietnam // New nor-chamigrane and bisabolane sesquiterpenoids from the sea hare *Aplysia dactylomela*

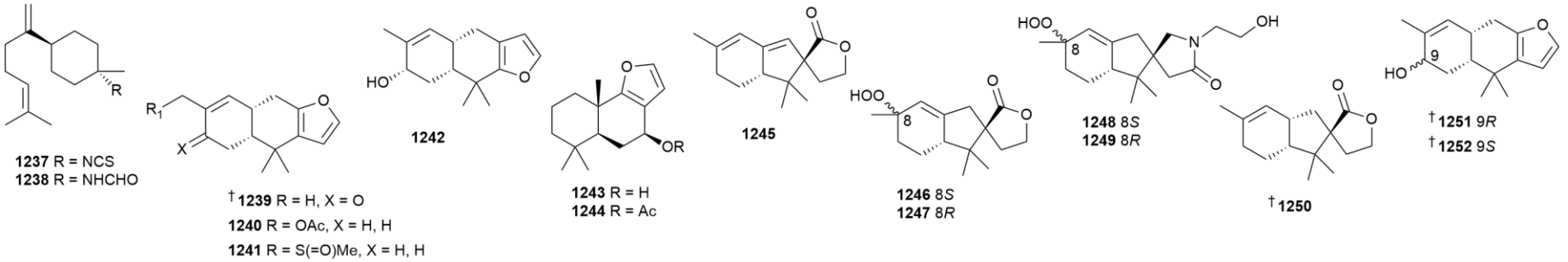
1223 // N // dactylomelanin C // IA *vs* 3 HTCLs.
1224 // N // dactylomelanin D // IA *vs* 3 HTCLs.
1225 // N // dactylomelanin E // IA *vs* 3 HTCLs.
1226 // R // 2-chloro-3,7-epoxychamigran-9-one // IA vs 3 HTCLs.

490 Mollusca *Aplysia argus* // Ikei Is., Uruma City, Okinawa, Japan // Diversity of halogenated secondary metabolites in Okinawan *Aplysia argus* including 12-hydroxypinnaterpene C and their feeding targets

1227 // N // 12-hydroxypinnaterpene C // IA *vs* 1 bact.strain.

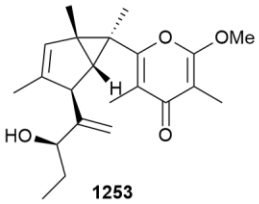


492 Mollusca *Hexabranchus sanguineus* // Ximao Is., Hainan Province, China // Structurally diverse diterpenoids from the Sanya Bay nudibranch *Hexabranchus sanguineus* and its sponge-prey *Chelonaplysilla* sp.
1228 // N // sanyanolide A // XRD; IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1229 // N // sanyanolide B // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1230 // N // sanyanolide C // NT.
1231 // N // sanyanolide D // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1232 // N // sanyanolide E // IA to weak activ. *vs* 7 bact. strains; IA to weak activ. *vs* 1 fungal strain; IA *vs* NO prod.
1233 // N // sanyanolide F // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1234 // N // sanyanolide G // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1235 // N // sanyanolide H // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.
1236 // N // sanyanolide I // IA *vs* 7 bact. strains; IA *vs* 1 fungal strain; IA *vs* NO prod.

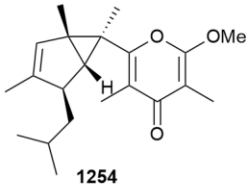


493 Mollusca *Hexabranchus sanguineus* // Ximao Is., Hainan Province, China // Chemistry, chemo-ecology, and biological activities of uncommon and structurally diverse sesquiterpenoids from the Sanya Bay nudibranch *Hexabranchus sanguineus*

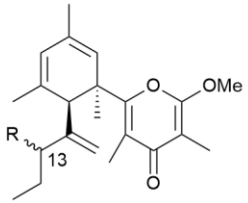
1237 // N // sanyagunin A // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1238 // N // sanyagunin B // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1239 // N // sanyagunin C // XRD; IA vs 5 bact. strains; IA *vs* 4 HTCLs.
1240 // N // sanyagunin D // IA vs 5 bact. strains; IA *vs* 4 HTCLs.
1241 // N // sanyagunin E // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1242 // N // sanyagunin F // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1243 // N // sanyagunin G // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1244 // N // sanyagunin H // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1245 // N // sanyalide A // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1246 // N // sanyalide B // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1247 // N // sanyalide C // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1248 // N // sanyalactam A // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1249 // N // sanyalactam B // IA vs 5 bact. strains; IA *vs* 4 HTCLs.
1250 // R // herbabysidolide // XRD; IA vs 5 bact. strains; IA *vs* 4 HTCLs.
1251 // R // $C_{15}H_{20}O_2$ // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.
1252 // R // $C_{15}H_{20}O_2$ // IA *vs* 5 bact. strains; IA *vs* 4 HTCLs.



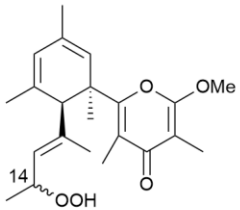
1253



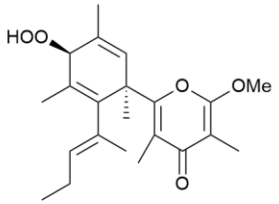
1254



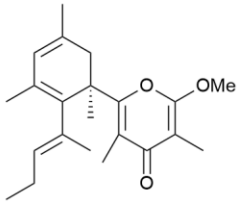
† **1255** 13*S*, R = OOH
† **1256** 13*R*, R = OOH
† **1257** 13*R*, R = OH
† **1258** 13*S*, R = OH



† **1259** 14*R*
† **1260** 14*S*



† **1261**

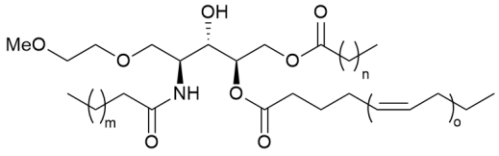


† **1262**

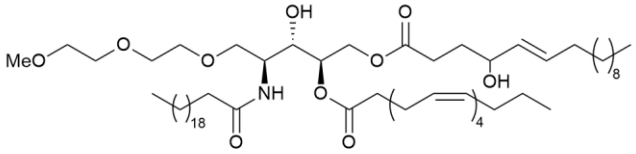
494 Mollusca *Placobranchus ocellatus* // Ximao Is., Hainan Province, China // Ocellatuspyrones A–G, new antibacterial polypropionates from the Chinese mollusk *Placobranchus ocellatus*

1253 // N // (±)-ocellatuspyrone A // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1254 // N // (±)-ocellatuspyrone B // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1255 // N // ocellatuspyrone C // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1256 // R // tridachiapyrone J // XRD; IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1257 // R // tridachiapyrone G // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1258 // R // tridachiapyrone H // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1259 // N // ocellatuspyrone D // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1260 // N // ocellatuspyrone E // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1261 // N // ocellatuspyrone F // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.
1262 // N // ocellatuspyrone G // IA *vs* 6 bact. strains; IA *vs* anti-inflam.; IA *vs* PTP1B; IA *vs* 1 virus strain.

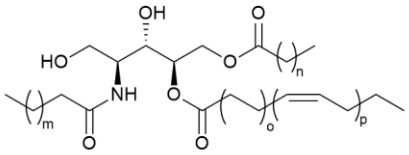
8 Molluscs



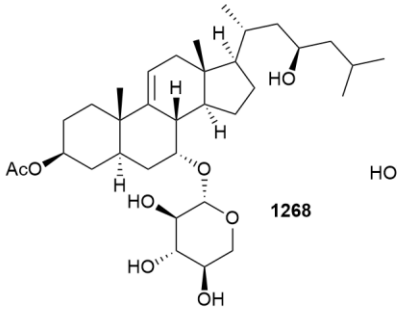
1263 m = 18, n = 14, o = 5
1264 m = 9, n = 12, o = 2



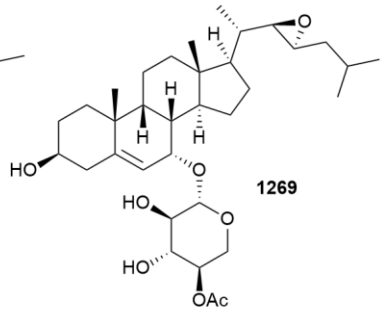
1265



1266 m = 9, n = 14, o = 2, p = 3
1267 m = 9, n = 12, o = 1, p = 2



1268



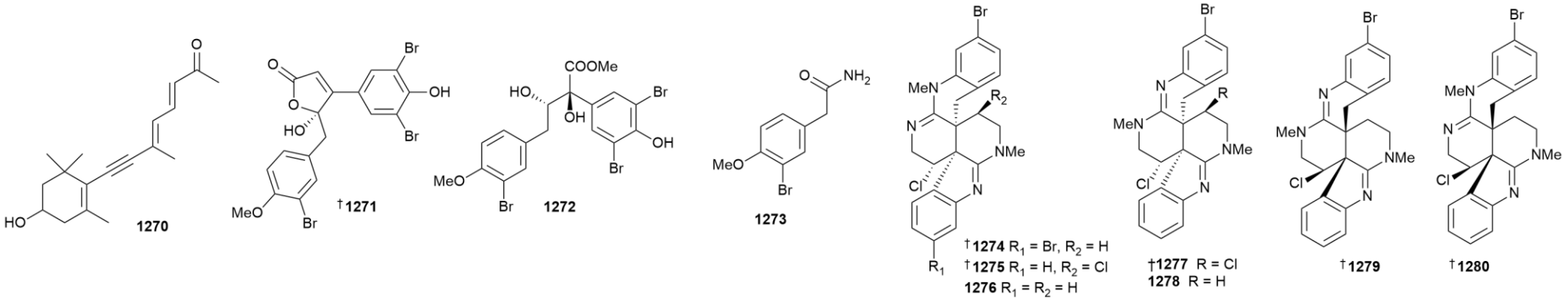
1269

495 Mollusca *Bathymodiolus azoricus* // Mid-Atlantic Ridge // Bathymodiolamides C, D, and E, necrosis inducers from a deep-sea hydrothermal vent invertebrate mussel, *Bathymodiolus azoricus*

1263 // N // bathymodiolamide C // IA as necrosis inducer.
1264 // N // bathymodiolamide D // NT.
1265 // N // bathymodiolamide E // IA as necrosis inducer.
1266 // R // bathymodiolamide A // NT.
1267 // R // bathymodiolamide B // NT.

503 Mollusca *Cistopus indicus* // Thoothukkudii and Ramanathapuram, India // Non-sulfated steroidal glycosides cistoindosides from marine 'old woman octopus' *Cistopus indicus* attenuate pro-inflammatory lipoxygenase

1268 // N // cistoindoside A // weak anti-inflam.
1269 // N // cistoindoside B // weak anti-inflam.

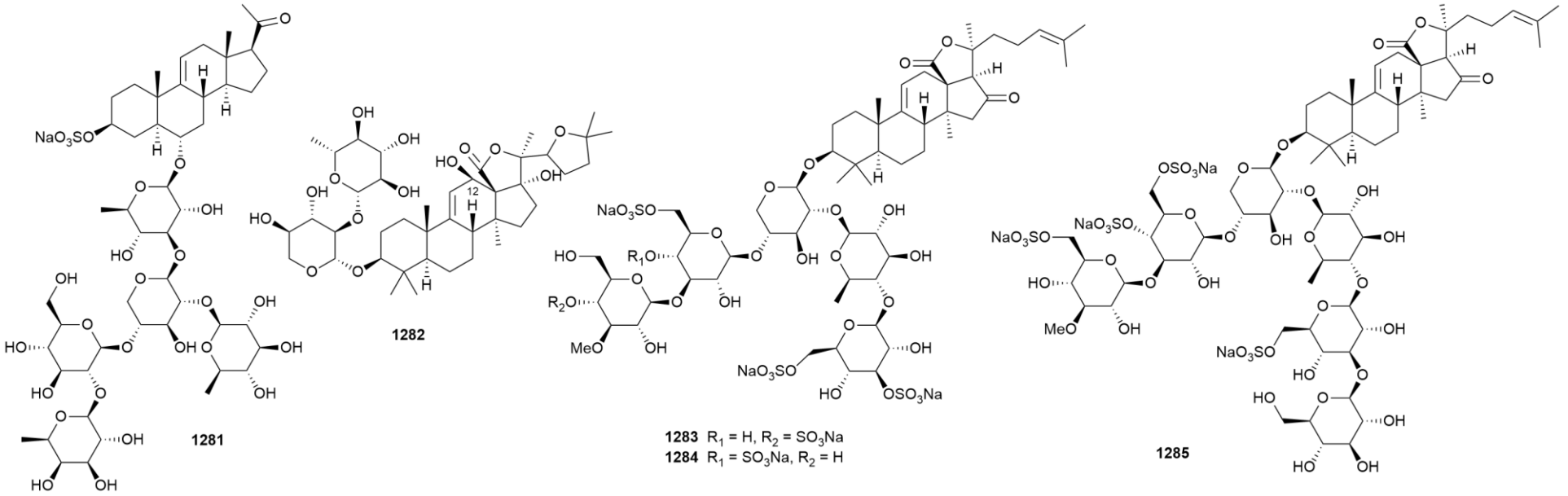


514 Chordata *Halocynthia roretzi* // * // Halorotetin A: a novel terpenoid compound isolated from ascidian *Halocynthia rotetzi* exhibits the inhibition activity on tumor cell proliferation
1270 // N // halorotetin A // IA *vs* 6 HTCLs.

515 Chordata *Polycarpa procera* // Moreton Bay, Queensland, Australia // α-Synuclein aggregation inhibitory procerolides and diphenylalkanes from the ascidian *Polycarpa procera*
1271 // N // procerolide E // binds to α-synuclein in MS assay.
1272 // N // methylprocerolate A // racemate; binds to α-synuclein in MS assay.
1273 // M // 3-bromo-4-methoxyphenylacetamide // binds to α-synuclein in MS assay.

516 Chordata *Polyandrocarpa* sp // West Koror Lagoon, Palau // rare caulamidine hexacyclic alkaloids from the marine ascidian *Polyandrocarpa* sp.
1274 // N // isocaulamidine B // IA *vs* E3 ubiquitin ligase CBL-b.
1275 // N // isocaulamidine C // IA *vs* E3 ubiquitin ligase CBL-b.
1276 // N; R in ref. A41255 // isocaulamidine D // IA *vs* E3 ubiquitin ligase CBL-b.
1277 // N // caulamidine C // IA *vs* E3 ubiquitin ligase CBL-b.
1278 // N; R in ref. A41255 // caulamidine D // IA *vs* E3 ubiquitin ligase CBL-b.

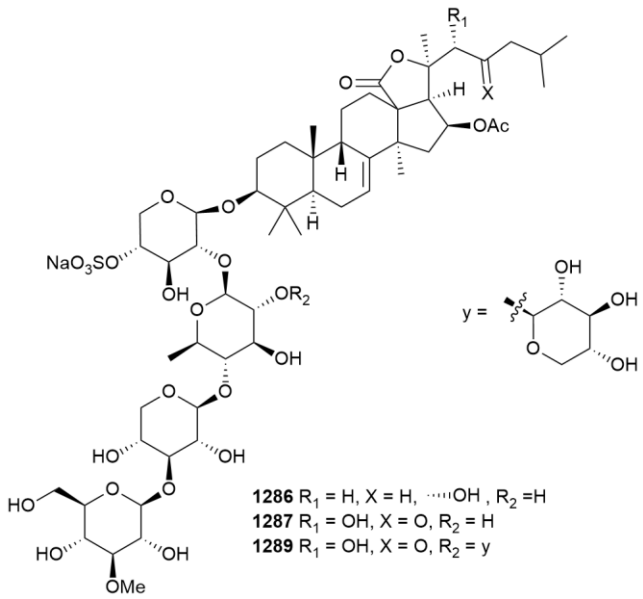
517 Chordata *Polyandrocarpa* sp // * // enantioselective total syntheses of (−)-caulamidine D and (−)-isocaulamidine D and their absolute configuration reassignment
1279 // R // (−)-caulamidine D // revised by total synth.; XRD.
1280 // R // (−)-isocaulamidine D // revised by total synth.; XRD.

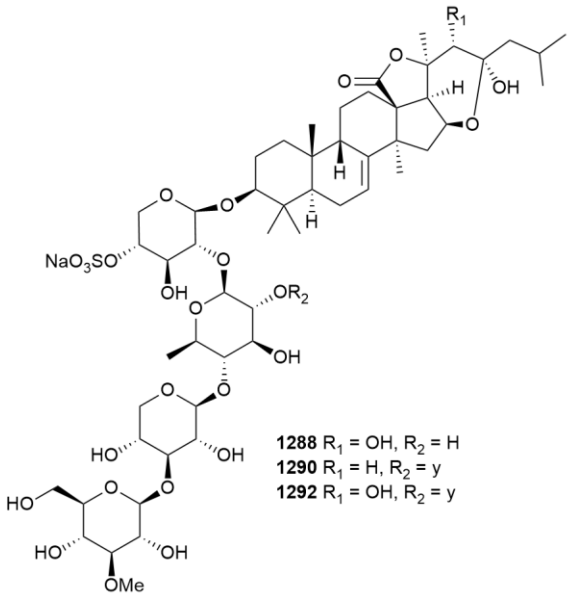


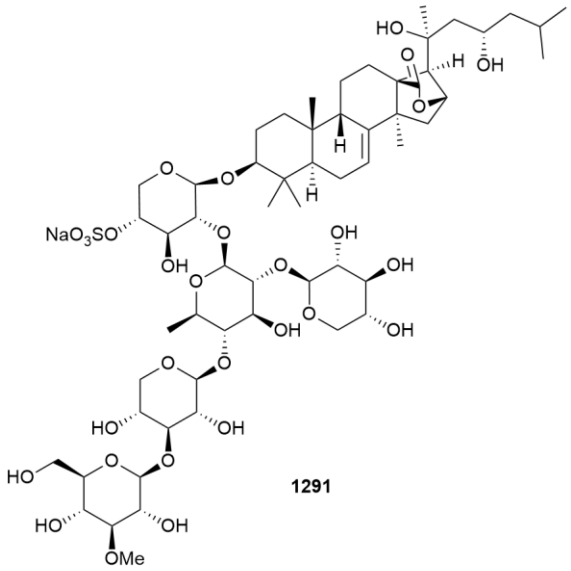
525 Echinodermata *Protoreaster nodosus* // Hon Cau, Binhthuan, Vietnam // Asterosaponins from the starfish *Protoreaster nodosus*
1281 // N // protonodososide // IA *vs* 5 HTCLs.

526 Echinodermata *Holothuria atra* // East Java, Indonesia // Saponin and fatty acid profiling of the sea cucumber *Holothuria atra*, α-glucosidase inhibitory activity and the identification of a novel triterpene glycoside
1282 // N // 12-*epi*-desholothurin B // NT.

527 Echinodermata *Paracaudina chilensis* // Troitsa Bay, Japan // Chilensosides E, F, and G—new tetrasulfated triterpene glycosides from the sea cucumber *Paracaudina chilensis* (Caudinidae, Molpadida): structures, activity, and biogenesis
1283 // N // chilensoside E // IA *vs* 5 HTCLs; IA haemolysis.
1284 // N // chilensoside F // IA *vs* 5 HTCLs; IA haemolysis.
1285 // N // chilensoside G // IA *vs* 5 HTCLs; IA haemolysis.

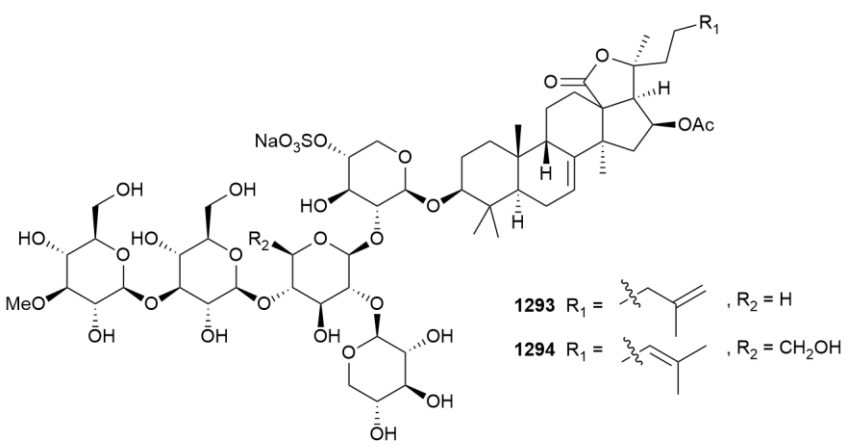


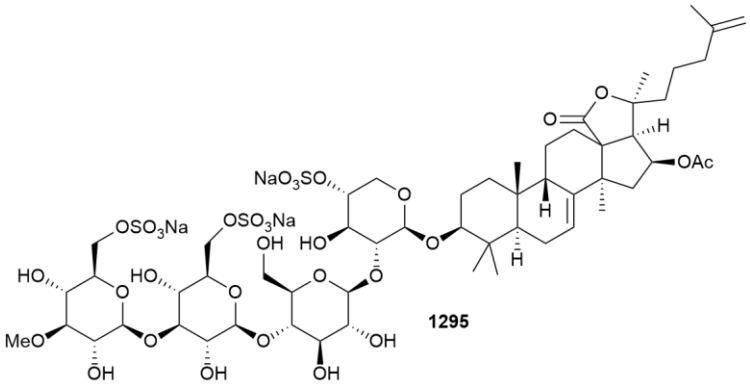


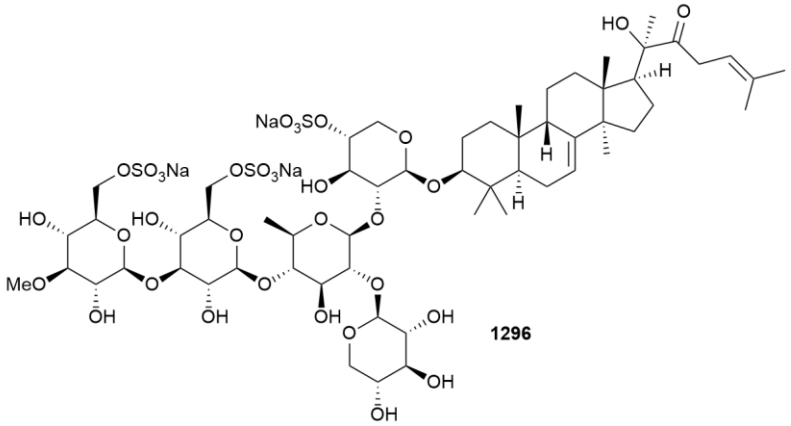


528 Echinodermata *Cucumaria djakonovi* // Avacha Gulf, Starichkov's Is., Russia // Djakonoviosides A, A1, A2, B1–B4 — triterpene monosulfated tetra- and pentaosides from the sea cucumber *Cucumaria djakonovi*: the first finding of a hemiketal fragment in the aglycones; activity against human breast cancer cell lines

1286 // N // djakonovioside A // IA to weak cytotox. *vs* 5 HTCLs; weakly haemolytic.
1287 // N // djakonovioside A_1 // IA to weak cytotox. *vs* 5 HTCLs; weakly haemolytic.
1288 // N // djakonovioside A_2 // IA *vs* 5 HTCLs; IA haemolysis.
1289 // N // djakonovioside B_1 // IA *vs* 5 HTCLs; weak haemolysis.
1290 // N // djakonovioside B_2 // IA *vs* 5 HTCLs; IA haemolysis.
1291 // N // djakonovioside B_3 // IA *vs* 5 HTCLs; IA haemolysis.
1292 // N // djakonovioside B_4 // IA *vs* 5 HTCLs; IA haemolysis.







529 Echinodermata *Cucumaria djakonovi* // Starichkov's Is., Avacha Gulf // Sulfated triterpene glycosides from the far eastern sea cucumber *Cucumaria djakonovi*: djakonoviosides C1, D1, E1, and F1; cytotoxicity against human breast cancer cell lines; quantitative structure–activity relationships

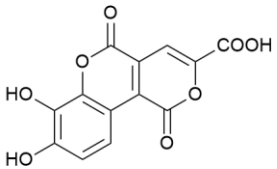
1293 // N // djakonovioside C_1 // IA to weak cytotox. *vs* 4 HTCLs; inhib. tumour colony formn and migration; weakly haemolytic.

1294 // N // djakonovioside D_1 // IA *vs* 4 HTCLs; weak haemolysis.

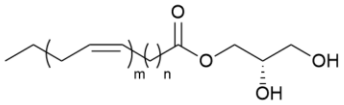
1295 // N // djakonovioside E_1 // IA to weak cytotox. *vs* 4 HTCLs; inhib. tumour colony formn and migration; IA haemolytic.

1296 // N // djakonovioside F_1 // IA *vs* 4 HTCLs; mod. haemolysis.

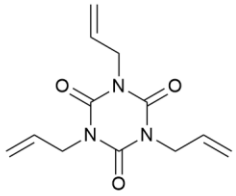
11 Miscellaneous



1297



†**1298** m = 5, n = 4
1299 m = 4, n = 5



1300

544 Tracheophyta *Lumnitzera racemosa* // Indonesian archipelago // Challenging structure elucidation of lumnitzeralactone, an ellagic acid derivative from the mangrove *Lumnitzera racemosa*
1297 // N // lumnitzeralactone // IA *vs* 1 bact. strain.

545 Chordata *Syngnathus acus* // Yangjiang City, Guangdong Province, China // New glycerolipids from the traditional Chinese medicine of *Syngnathus acus* (Hai-Long)
1298 // N // syngaculipid A // IA *vs* 2 HTCLs.
1299 // N // syngaculipid B // IA *vs* 2 HTCLs.
1300 // M // triallyl isocyanurate // IA *vs* 2 HTCLs.

12 Conclusions

Table S1: List of Invertebrate MNPs and their Prokaryote Sources

Invertebrate NP (year reported)	Species (Phylum)	Microbe Ascription method (year reported)	Microbe Specie (Phylum) biome	Similar microbe NP
calyculin A (1986)	*Discodermia calyx* (sponge)	BGC (2014)[1]	'*Entotheonella*' sp. (Tectomicrobia) marine	
theopederin A, mycalamide, onnamide A (1992, 1998)	*Theonella swinhoei, Mycale hentscheli* (sponge)	BGC (2014, 2020)[2]	'*Entotheonella*' sp. (Tectomicrobia) *Candidatus/Entomycale ignis* (Proteobacteria) marine	
konbamide (1991)	*Theonella swinhoei* (sponge)	BGC (2014)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
cyclotheonamide A, B (1990)	*Theonella swinhoei* (sponge)	BGC (2014)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
keramamide B−E, L−N, discobahamin A, B, orbiculamide A (1991)	*Theonella swinhoei* (sponge)	BGC (2014)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
pseudotheonamide A1 (1999)	*Theonella swinhoei* (sponge)	BGC (2014)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
nazumamide A (1991)	*Theonella swinhoei* (sponge)	BGC (2014)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
polytheonamides (2005)	*Theonella swinhoei* (sponge)	BGC (2012)[2]	'*Entotheonella*' sp. (Tectomicrobia) marine	
misakinolide A (1986)	*Theonella swinhoei* (sponge)	BGC (2015)1	*Candidatus Entotheonella serta*' (Tectomicrobia) marine	
polybrominated diphenyl ethers	Dysideidae (sponge)	BGC (2017)[3]	gammaproteobacteria (Proteobacteria) marine	
pateamine (1991)	*Mycale hentscheli* (sponge)	BGC (2020)[4]	*Candidatus Patea custodiens*" (Kiritimatiellaeota) marine	
mandelalide A−D (2012)	*Lissoclinum patella* (ascidian)	BGC (2017)[5]	*Candidatus Didemnitutus mandela*' (Verrucomicrobia) marine	
renieramycin E (1989)	*Reniera* sp. (sponge)	BGC (2019)[6]	*Candidatus Endohaliclona renieramycinifaciens*' (Proteobacteria) marine	
bryostatin 1 (1982)	*Bugula neritina* (bryozoan)	BGC (2007)[6]	*Candidatus Endobugula sertula*' (Proteobacteria) marine	
patellazoles A–C (1988)	*Lissoclinum patella* (ascidian)	BGC (2012)[7]	*Candidatus Endolissoclinum faulkneri*' (Proteobacteria) marine	
patellamides, ascidiacyclamide, trunkamides (1982, 1996)	*Lissoclinum patella* (ascidian)	BGC (2005,2008,2012)[8]	*Prochloron didemni* (Cyanobacteria) marine	
ET-743 (1990)	*Ecteinascidia turbinata* (ascidian)	BGC (2011)[9]	*Candidatus Endoecteinascidia frumentensis*' (Proteobacteria) marine	
kahalalides (1996)	B*Elysia rufescens* (mollusc)	BGC (2019)[10]	*Candidatus Endobryopsis kahalalidefaciens*' (Bacteroidota) marine	

dolastatin 10 (1987)	*Dolabella auricularia* (mollusc)	BGC (2024)[11]	*Caldora penicillata* (Cyanobacteria) marine	
palythine (1978)	*Palythoa* sp (cnidarian)	BGC (2021)[12]	*Nostoc linkia* (Cyanobacteria) marine	
theopalauamide, theonellamide A,D,E,G (1998)	*Theonella swinhoei* (sponge)	BGC (2018)[1]	*Candidatus Entotheonella serta*' (Tectomicrobia) marine	
peloruside A (2000)	*Mycale hentscheli* (sponge)	BGC (2020)[4]	unidentified bacteria (unknown) marine	
divamide A (2018)	*Didemnum molle* (ascidian)	BGC (2018)[13]	*Prochloron didemni* (Cyanobacteria) marine	
palmerolide A (2006)	*Synoicum adareanum* (ascidian)	BGC (2021)[14]	*Candidatus Synoicihabitans palmerolidicus*' (Verrucomicrobia) marine	
phorboxazoles (1995)	*Phorbas* sp, *Raspailia* sp (sponge)	BGC (2023)[15]	*Acanthopleuribacter pedis* (Acidobacteriota) marine	
lasonolides (1994)	*Forcepia* sp (sponge)	BGC (2022)[16]	;'*Candidatus Thermopylae lasonolidus*' (Verrucomicrobia) marine	
kasumigamide (2016)	*Discoderma calyx* (sponge)	BGC (2016)[17]	'*Entotheonella*' sp. (Tectomicrobia) marine	
aurantoside A (1999)	*Theonella swinhoei* (sponge)	BGC (2014)[1]	'*Entotheonella*' sp. (Tectomicrobia) marine	
amathamides (1985)	*Amathia wilsoni* (bryozoan)	cell location (1995)[18]	rob-shaped bacterium (Proteobacteria) marine	
13-demethylisodysidenin dihydrodysamide C and didechlorodihydrodysamide C (1982)	*Dysidea herbacea* (sponge)	cell location (1994)[19]	*Oscillatoria spongeliae* (cyanobacteria) marine	
2-(2',4'-dibromophenyl)-4,6-dibromophenol	*Dysidea herbaceae* (sponge)	cell location (1994)[20]	*Oscillatoria* sp (Cyanobacteria) marine	
andrimid (1994)	*Hyatella* sp. (sponge)	cell location (1994)[6]	*Vibrio* sp. (Proteobacteria) marine	
swinholide A (1985)	*Theonella swinhoei* (sponge)	culture (2005)[21]	*Symploca* sp, *Geitlerinema* sp (Cyanobacteria) marine	
lobatamide (1995)	*Aplidium lobatum* (ascidian)	culture (2020)[22]	*Gynuella sunshinyii* (Proteobacteria) soil	
palytoxin, deoxypalytoxin (1981)	*Palythoa toxicus* (cnidarian)	wild harvest (2011)[23]	*Trichodesmium* spp. (Cyanobacteria) marine	
fistularin-3, 11-hydroxyaerothionin, verongidoic acid, aerothionin, homopurpuroceratic acid B, purealidin L, aplysinamisine II, (1979)	Verongiida (sponge)	culture (2017)[24]	*Pseudovibrio denitrificans* (Proteobacteria) marine	
didemnum B (1981)	*Tridemnum solidum* (ascidian)	culture (2011)[25]	*Tistrella mobilis* (Proteobacteria) marine	
bengamide E (1990)	*Jaspis* cf. *coriacea* (sponge)	culture (2012)[6]	*Myxococcus virescens* (Myxococcota) soil	
makaluvamine A (1993)	*Zyzzya* cf. *marsalis* (sponge)	culture (2001)[6]	*Didymium bahiense* (Amoebozoa) soil	
manzamine A (1986)	*Haliclona* sp. (sponge)	culture (2014)[6]	*Micromonospora* M42 (Actinobacteria) marine	
iejimalide A (1991)	*Eudistoma* cf. *rigida* (ascidan)	wild harvest (2008)[6]	*Lyngbya* sp (Cyanobacteria) marine	
majusculamide C (1993)	*Ptilocaulis trachys* (sponge)	wild harvest (1984)[26]	*Lyngbya majuscula* (Cyanobacteria) marine	
cyclo-(L-Pro-L-Val), cyclo-(L-Pro-LLeu), cyclo-(L-Pro-L-Ala) (1983)	*Tedania ignis* (sponge)	culture (1988)[27]	*Micrococcus* sp. (Actinobacteria) marine	
6-*epi*-monanchorin (2016)	*Monanchora ungiculata, Halichondria panicea*, *Chaetopterus variopedatus* (polycheate worm) (sponge)	culture (2019)[28]	*Vibrio* sp. (Proteobacteria) marine	

mimosamycin (1994)	*Petrosia* sp. (sponge)	culture (1977)[6]	*Streptomyces lavendulae* (Actinobacteria) soil	
staurosporine (1992)	*Eudistoma toealensis* (ascidian)	culture (1977)[29]	*Salinispora* sp., *Verrucosispora* sp. (Actinobacteria) soil	
lissoclinolide (1990)	*Lissoclinum patella* (ascidian)	culture (1969)[30]	*Micropolyspora venezuelensis* (Actinobacteria) soil	
enterocin (1996)	*Didemnum* sp (ascidian)	culture (1976)[31]	*Streptomyces* sp (Actinobacteria) soil	
toyocamycin (1989)	*Jaspis johnstoni* (sponge)	culture (1956)[32]	*Streptomyces* sp (Actinobacteria) soil	
bacteriohopanetetrol (2001)	*Plakortis simplex* (sponge)	culture (1973)[29]	*Acetobacter* sp (Proteobacteria) soil	
psymbamide A, mozamide A/B, paltolide A−C, keramamide A/K (2007, 1997, 2010, 1991)	*Psammocinia* aff. *bulbosa* (sponge)	similar (1995)[29]	unknown (Cyanobacteria) freshwater	anabaenopeptin
tambjamines (1983)	*Sessibugula transluscens* (bryozoan)	similar (1999)[29]	*Pseudoalteromonas denitrificans*, *Serratia marcescens* (Proteobacteria) marine	tambjamines and cycloprodigiosin and prodigiosin
jaspamide, jasplakinolide, neosiphoniamolide A (1997)	*Jaspis jonstoni*,*Neosiphonia superstes* and others (sponge)	similar (1995)[6]	*Chondromyces crocatus* (Proteobacteria) soil	chondramides A-D
pseudodysidenin, dysidenamide and nordysidenin (1982)	*Dysidea herbacea* (sponge)	similar (2001)[19]	*Lyngbya majuscula* (cyanobacteria) marine	related peptides
sphinxolide B (1999)	*Neosiphonia superstes* (sponge)	similar (1986)[6]	*Scytonema pseudohofmanni* (Cyanobacteria/*Myxococcus stipitatus* Myxococcota) freshwater/soil	scytophycin C/ rhizopodin
discodermide (1991)	*Discodermia dissoluta* (sponge)	similar (2015)[6]	*Alteromonas* sp (Proteobacteria/ *Streptomyces* sp.Actinobacteria) marine/soil	alteramide A/ ikarugamycin
arenastatin (1994)	*Dysidea arenaria* (sponge)	similar (1990)[6]	*Nostoc* sp (Cyanobacteria) marine	Arenastatin, Cryptophycin-24, Cryptophycin-1 32
latrunculin A (1980)	*Cacospongia mycofijiensis*, *Negombata magnifica* (sponge)	similar (1996)[6]	*Sorangium cellulsoum* (Myxococcota) soil	Epothilone B
motuporin/nodularin-V (1992)	*Theonella swinhoei* (sponge)	similar (1988)[6]	*Microcystis aerugionsa, Planktothrix agardhii* (Cyanobacteria) freshwater	Nodularin
psymberin/irciniastatin A (2004)	*Psammocinia* sp., *Ircinia* sp. (sponge)	similar[6]	*Pseudomonas* sp. (Proteobacteria) soil	Unknown
salicylihalamide A (2001)	*Haliclona* sp. (sponge)	similar (1998)[6]	*Chondromyces* sp. (Proteobacteria) soil	apicularen A
namenamicin/shishijimicin (1996)	*Polysyncraton lithostrotum*, *Didemnum proliferum* (ascidan)	similar (1985)[6]	*Actinomadura verrucosospora* (Actinobacteria) soil	esperamicin A1
dysinosin A−D, chlorodysinosin A (2002)	Dysideidae (sponge)	similar (1994)[18]	*Nostoc* sp UHCC0870 (Cyanobacteria) freshwater	varlaxin 1046A
dysidazirine (1995)	*Dysidea fragilis* (sponge)	similar (2022)[18]	*Cladora* sp (Cyanobacteria) marine	dysidarizine carboxylic acid
haterumalides NB-NE (1999)	*Ircinia* sp (sponge)/ *Lissoclinum* sp (ascidian)	similar (1999)[18]	*Serratia marcescens* (Proteobacteria) soil	haterumalide NA
microsclerodermins (1994)	*Microscleroderma* sp *Theonella* sp (sponge)	similar (2013)[18]	*Jahnella* sp (Proteobacteria)/ *Sorangium pellulosum* (Myxococcota) soil	microsclerodermin D, L

aplidiopsamine A (2010)	*Aplidiopsis confluata* (ascidian)	similar (2006)[18]	*Rapidithrix thailandica* (Bacteriodota) marine	marinoquinolines

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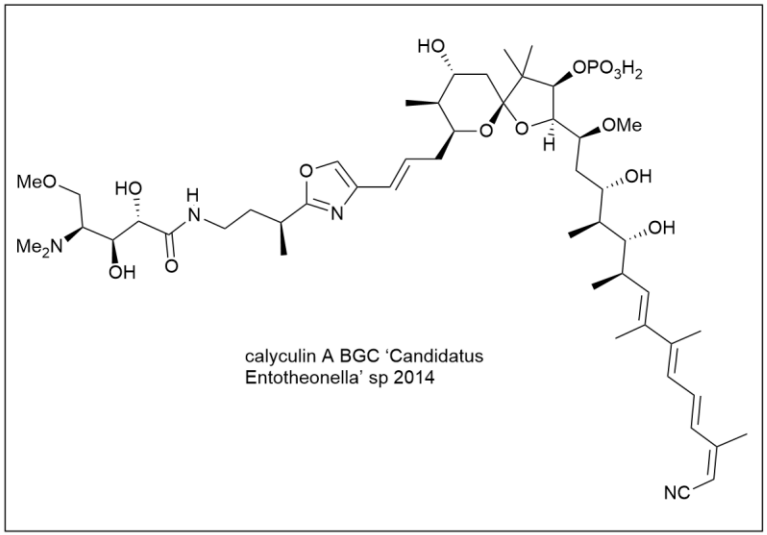
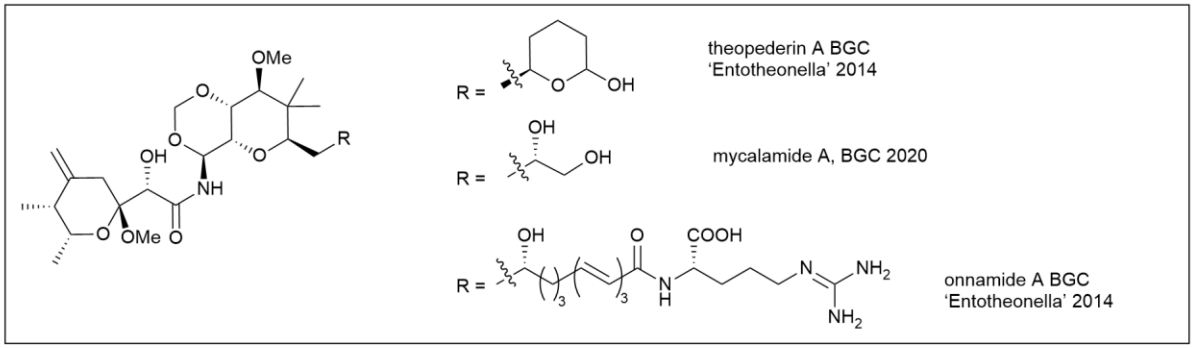
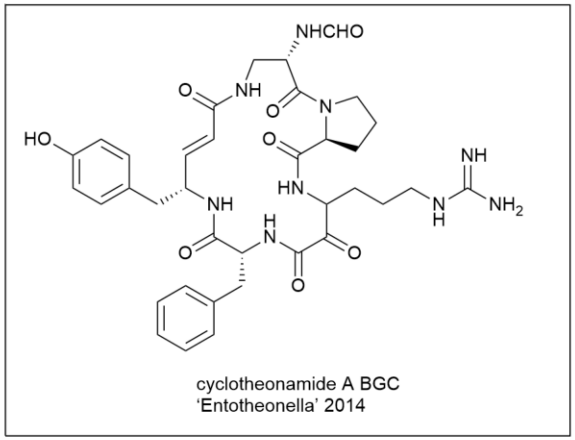
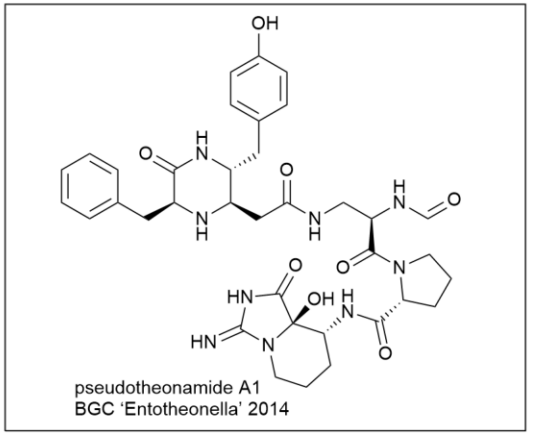
12 Conclusions

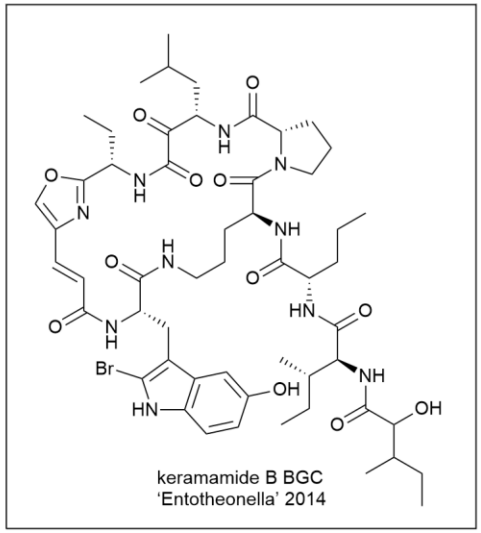
Figure S1. Structures of Marine Invertebrate NPs that are ascribed to or associated with prokaryotes

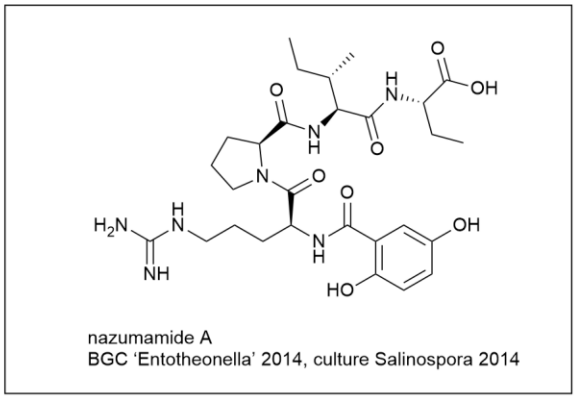


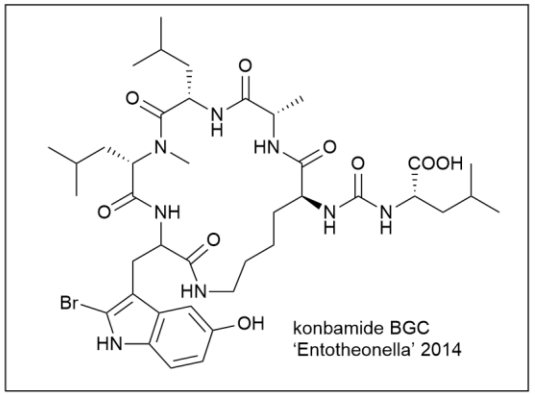












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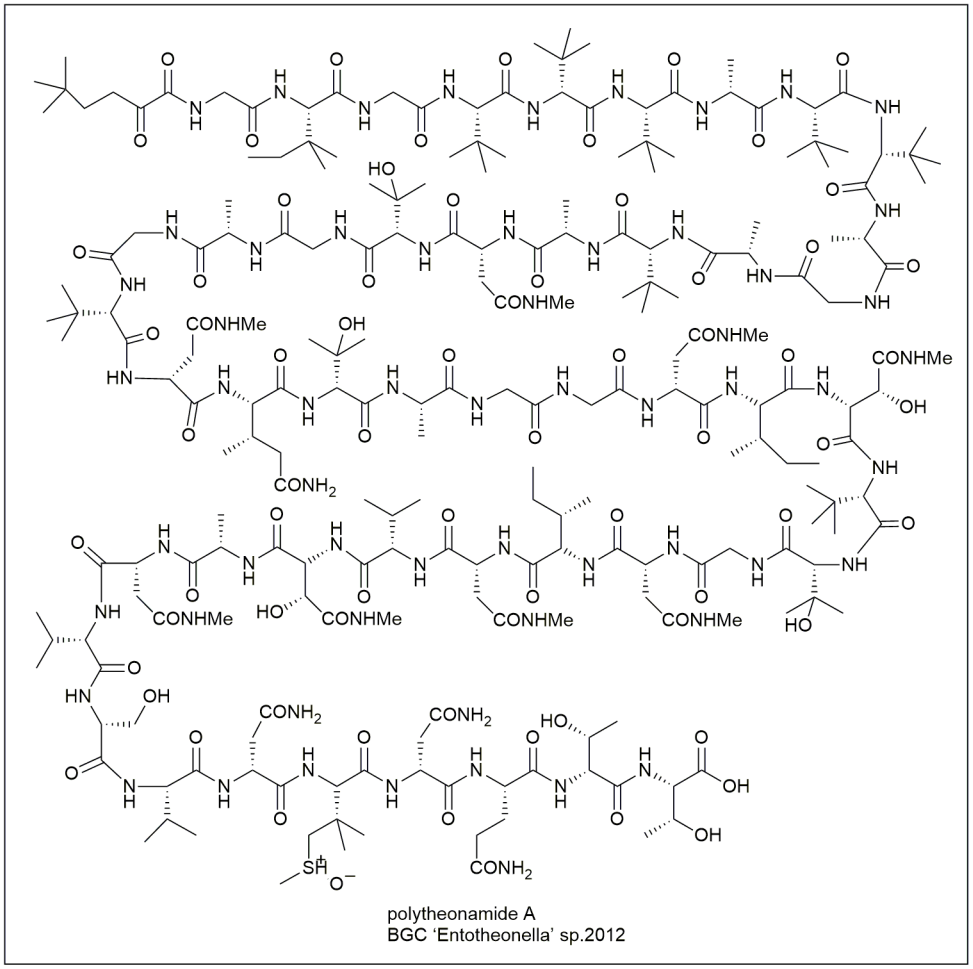
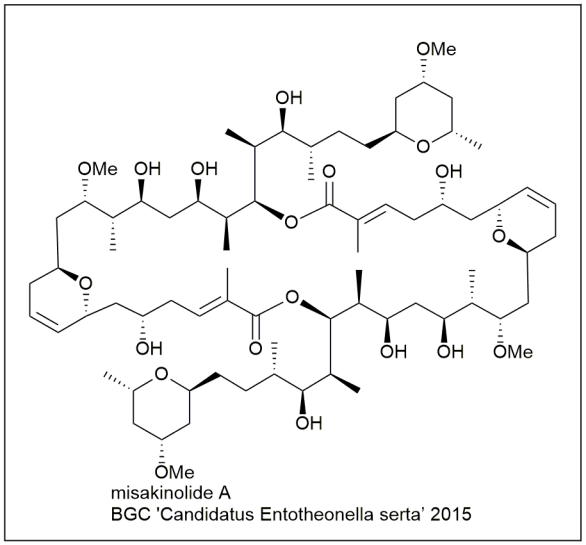
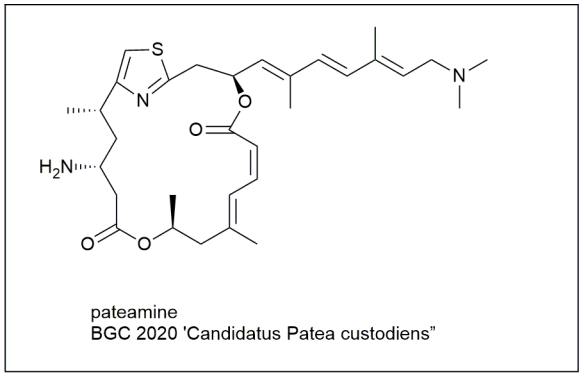


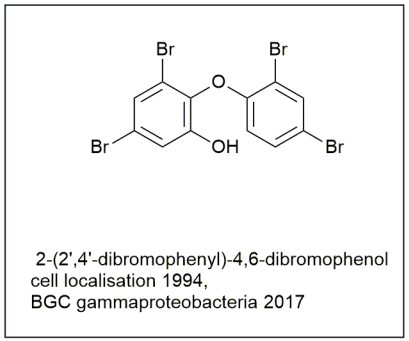
polytheonamide A
BGC 'Entotheonella' sp.2012



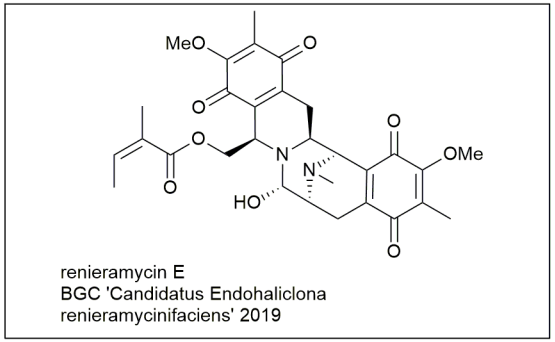
misakinolide A
BGC 'Candidatus Entotheonella serta' 2015



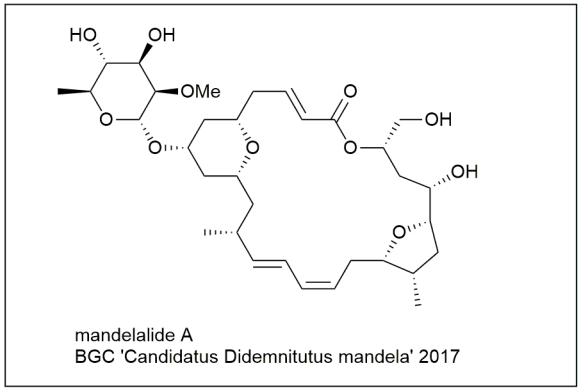
pateamine
BGC 2020 'Candidatus Patea custodiens"



2-(2',4'-dibromophenyl)-4,6-dibromophenol
cell localisation 1994,
BGC gammaproteobacteria 2017



renieramycin E
BGC 'Candidatus Endohaliclona renieramycinifaciens' 2019



mandelalide A
BGC 'Candidatus Didemnitutus mandela' 2017

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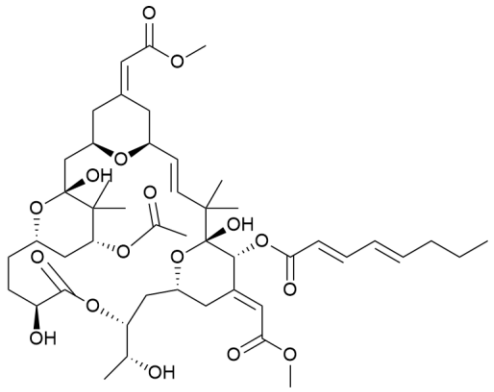
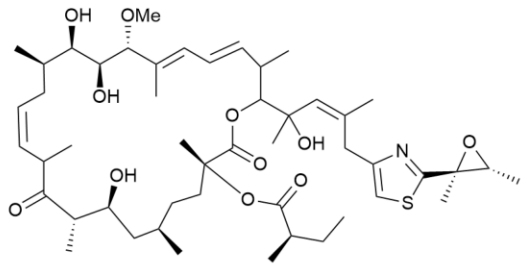
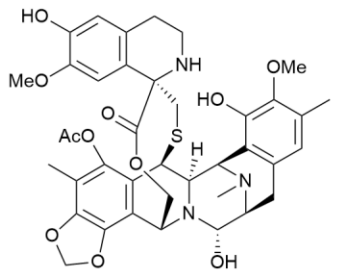


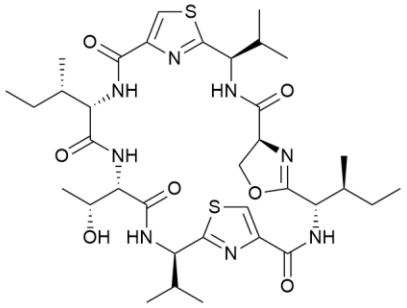
bryostatin 1
BGC 'Candidatus Endobugula sertula' 2007



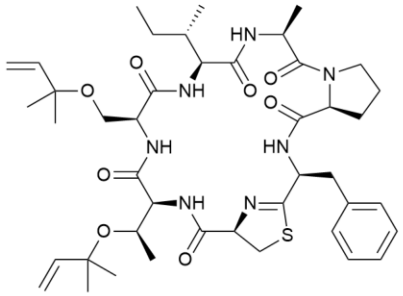
patellazole A
BGC 'Candidatus Endolissoclinum faulkneri' 2012



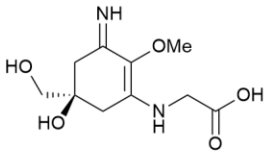
ecteinascidin 743
BGCs "Candidatus Endoecteinascidia frumentensis" 2011 partial



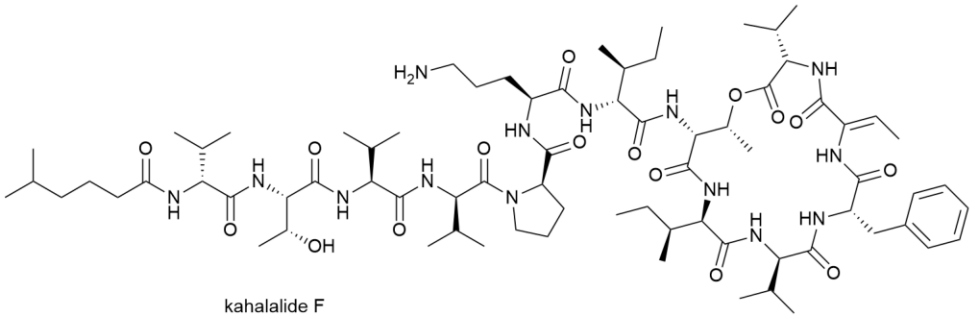
patellamide A
heterologous expression/BGC *Prochloron* sp 2005



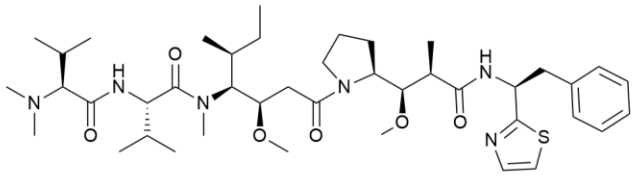
trunkamide A
BGC *Prochloron didemni* 2011



palythine
BGC/heterologous gene expression
Nostoc linckia 2021

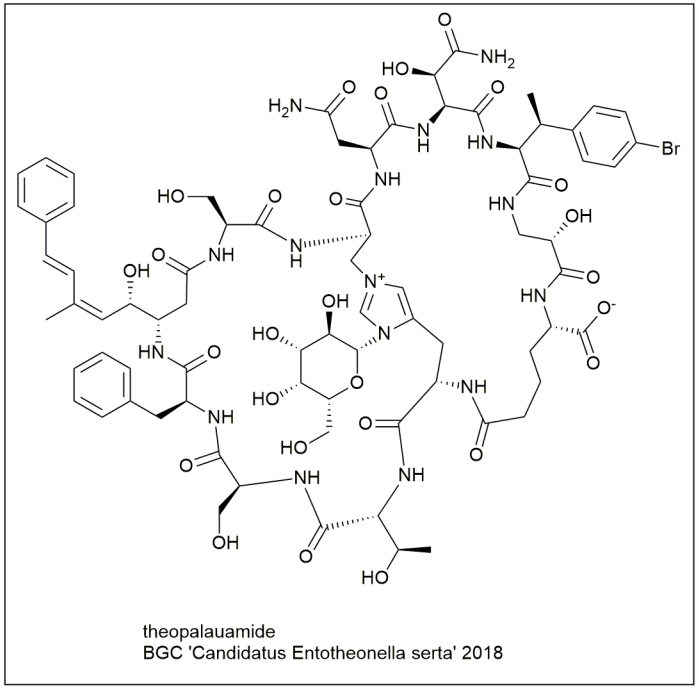


kahalalide F
BGC: "Candidatus Endobryopsis kahalalidefaciens" 2019

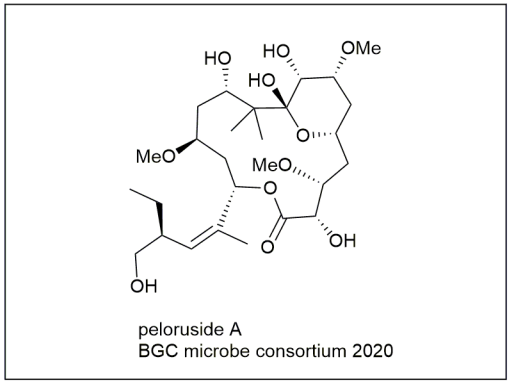


dolastatin 10
BGC *Caldora penicillata* cyanobacteria, 2024

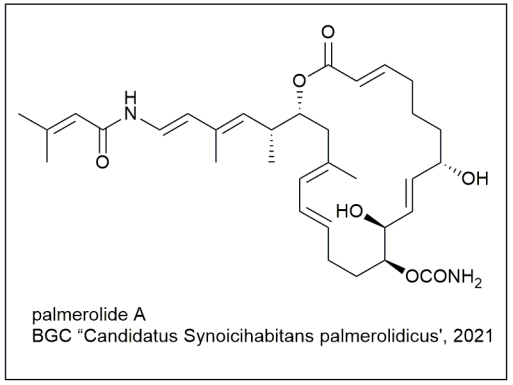
12 Conclusions



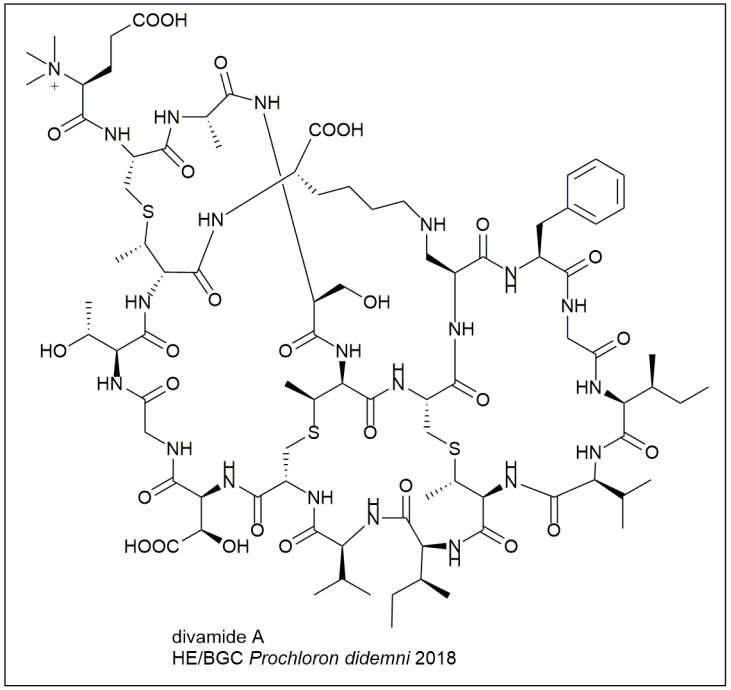
theopalauamide
BGC 'Candidatus Entotheonella serta' 2018



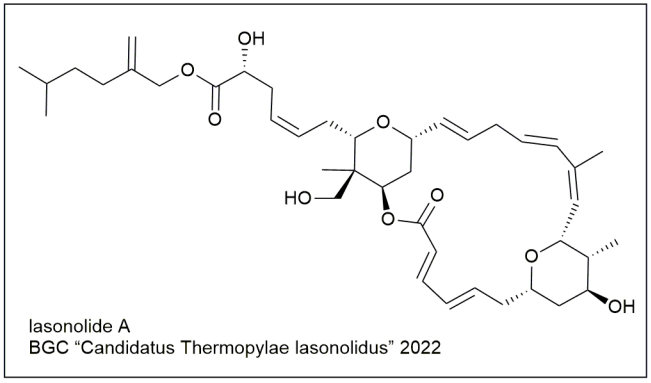
peloruside A
BGC microbe consortium 2020



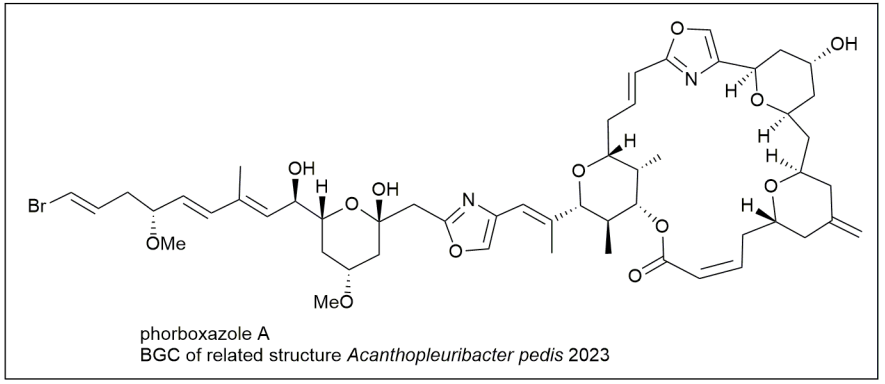
palmerolide A
BGC "Candidatus Synoicihabitans palmerolidicus', 2021



divamide A
HE/BGC *Prochloron didemni* 2018



lasonolide A
BGC "Candidatus Thermopylae lasonolidus" 2022



phorboxazole A
BGC of related structure *Acanthopleuribacter pedis* 2023

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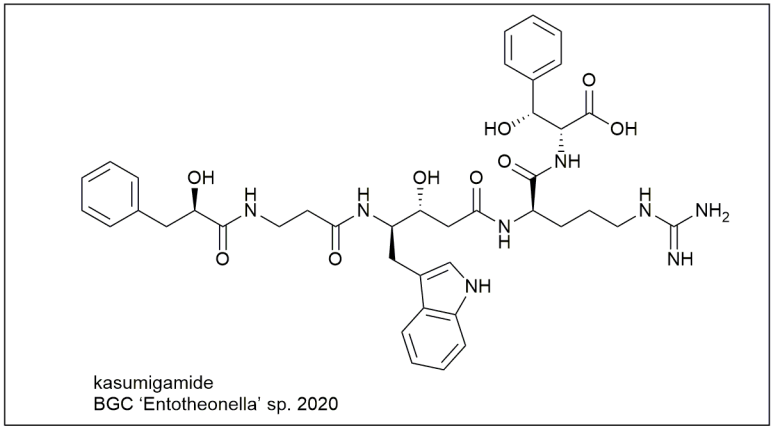
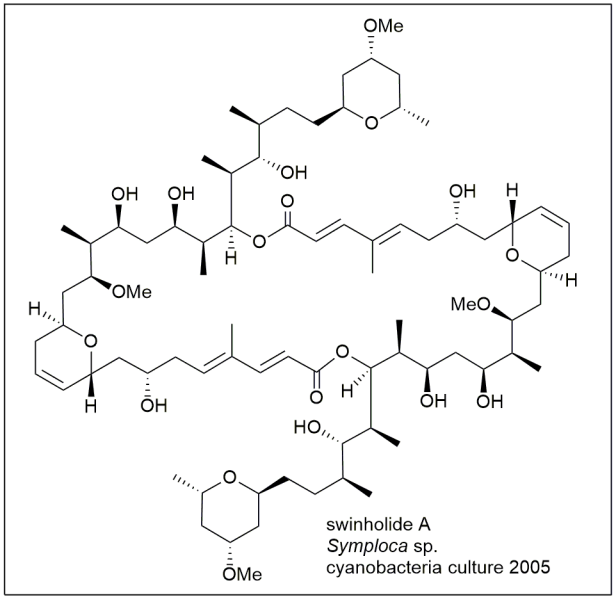
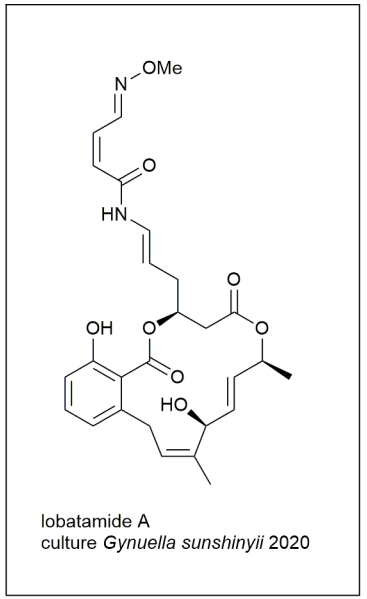


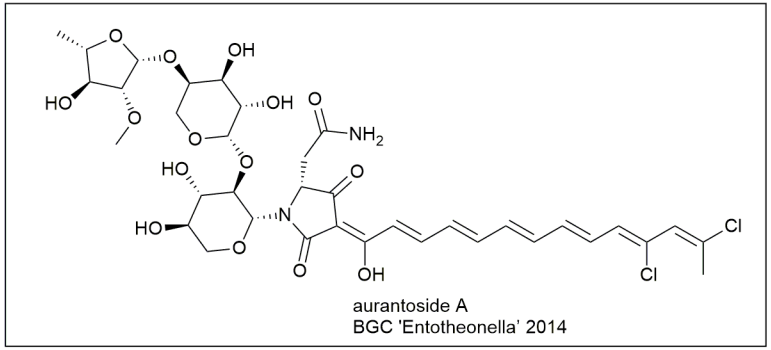
kasumigamide
BGC 'Entotheonella' sp. 2020



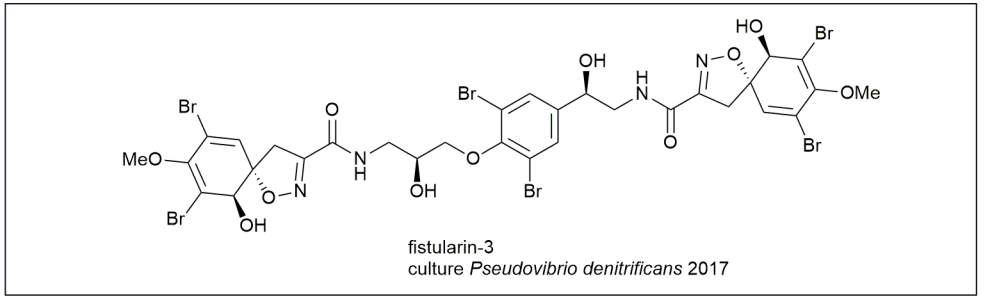
swinholide A
Symploca sp.
cyanobacteria culture 2005



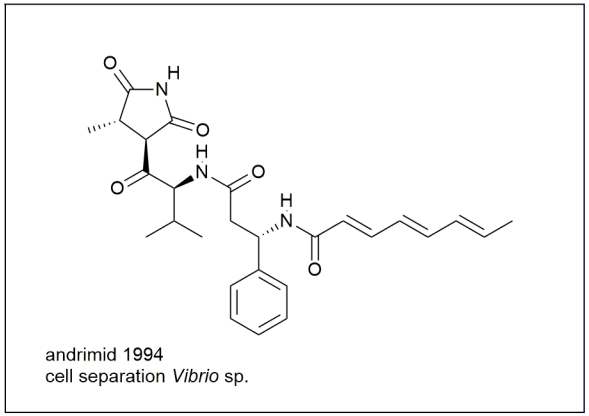
lobatamide A
culture *Gynuella sunshinyii* 2020



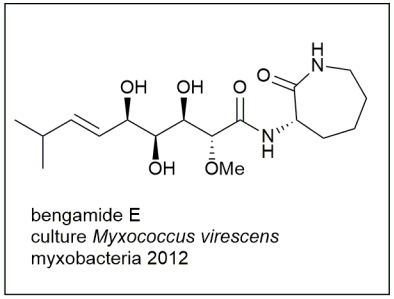
aurantoside A
BGC 'Entotheonella' 2014



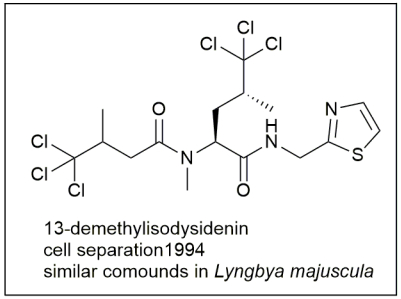
fistularin-3
culture *Pseudovibrio denitrificans* 2017



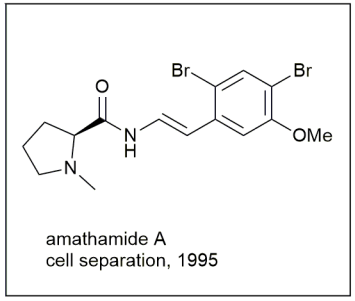
andrimid 1994
cell separation *Vibrio* sp.



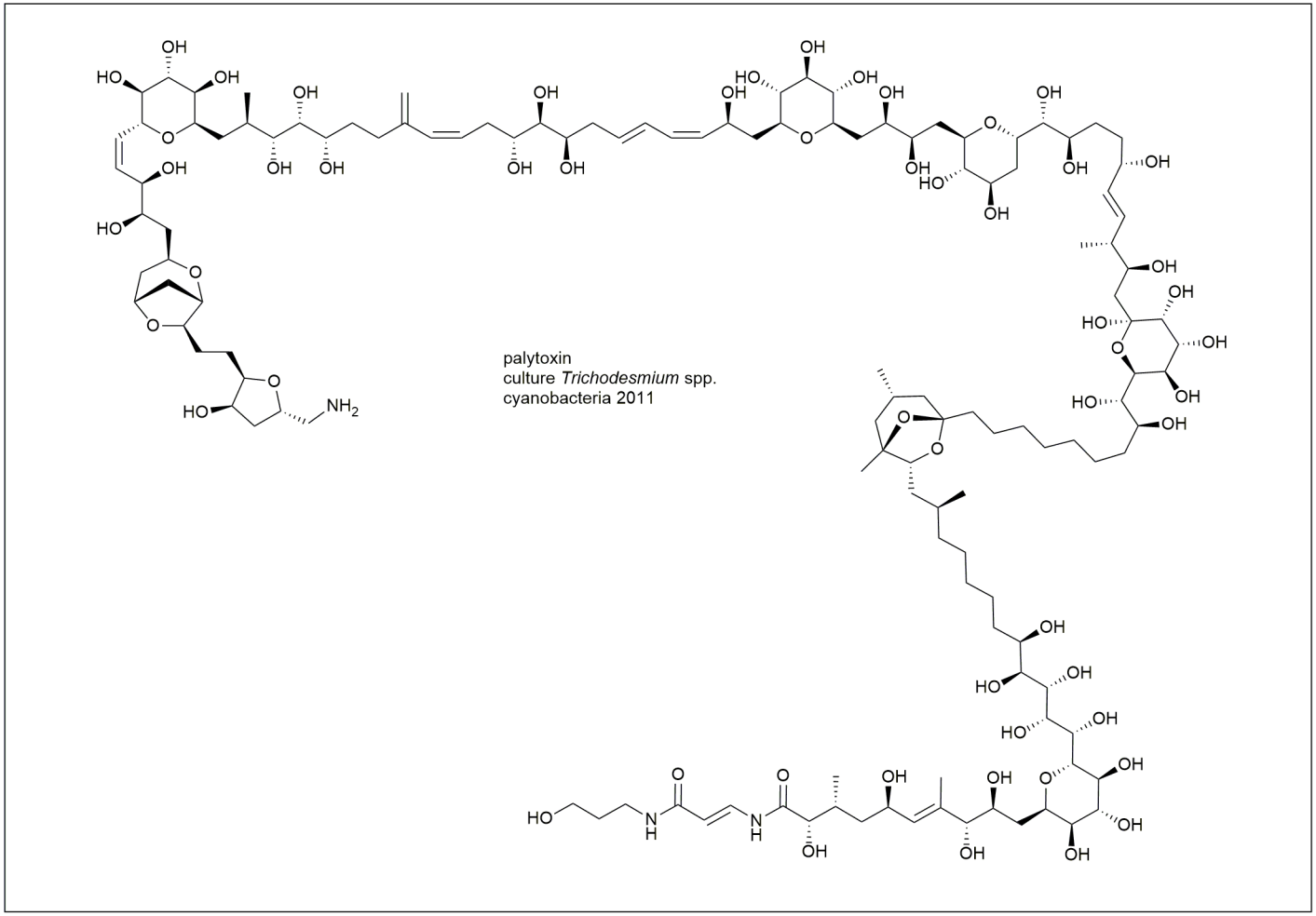
bengamide E
culture *Myxococcus virescens*
myxobacteria 2012



13-demethylisodysidenin
cell separation1994
similar comounds in *Lyngbya majuscula*



amathamide A
cell separation, 1995


palytoxin
culture *Trichodesmium* spp.
cyanobacteria 2011

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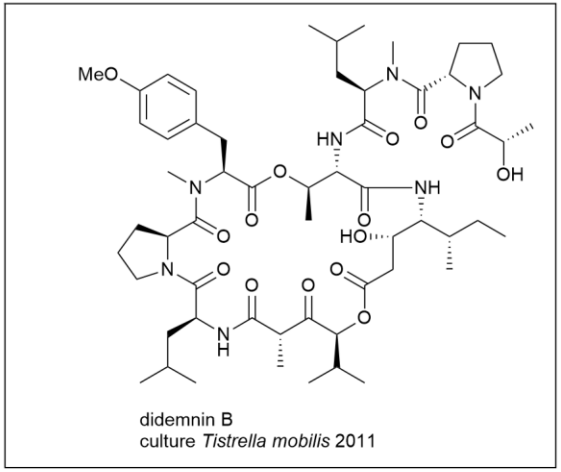
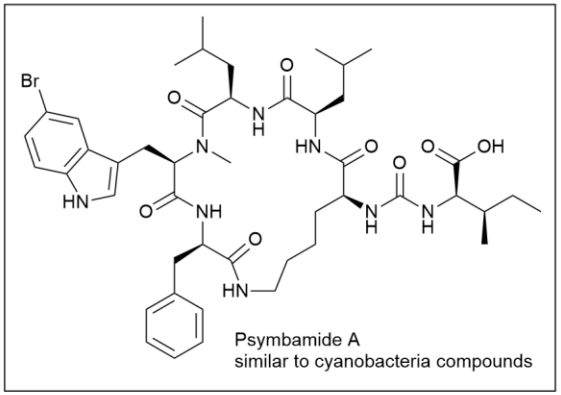
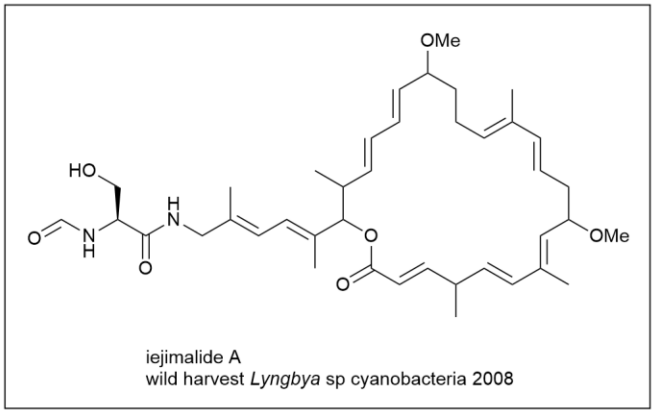


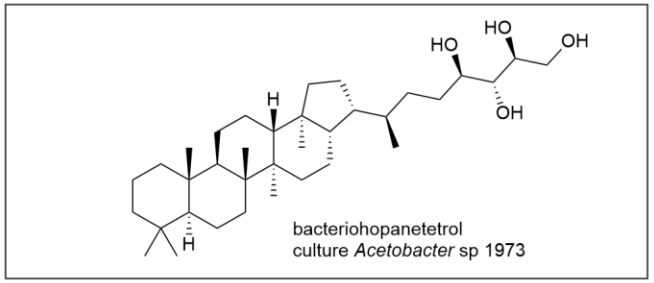
didemnin B
culture *Tistrella mobilis* 2011



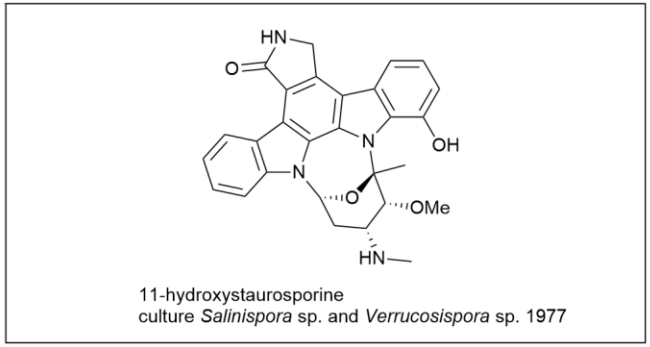
Psymbamide A
similar to cyanobacteria compounds



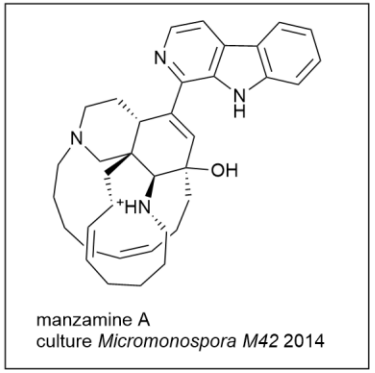
iejimalide A
wild harvest *Lyngbya* sp cyanobacteria 2008



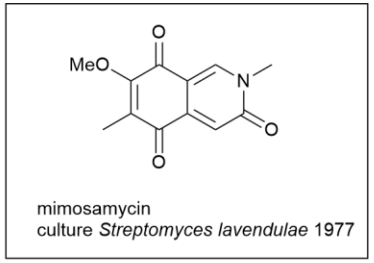
bacteriohopanetetrol
culture *Acetobacter* sp 1973



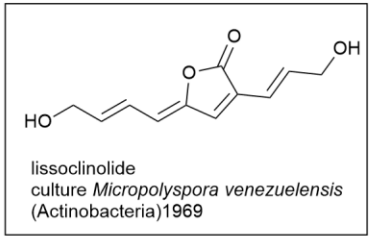
11-hydroxystaurosporine
culture *Salinispora* sp. and *Verrucosispora* sp. 1977



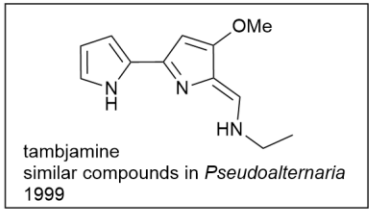
manzamine A
culture *Micromonospora M42* 2014



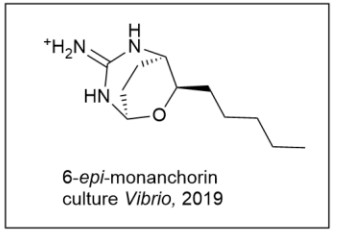
mimosamycin
culture *Streptomyces lavendulae* 1977



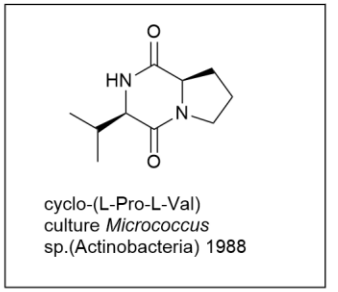
lissoclinolide
culture *Micropolyspora venezuelensis*
(Actinobacteria)1969



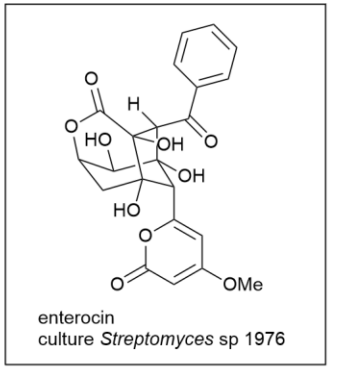
tambjamine
similar compounds in *Pseudoalternaria*
1999



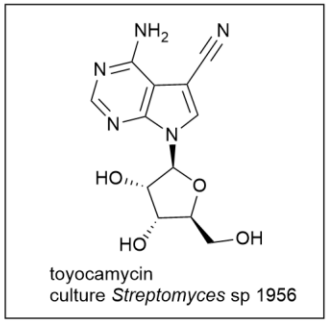
6-*epi*-monanchorin
culture *Vibrio*, 2019



cyclo-(L-Pro-L-Val)
culture *Micrococcus*
sp.(Actinobacteria) 1988



enterocin
culture *Streptomyces* sp 1976



toyocamycin
culture *Streptomyces* sp 1956

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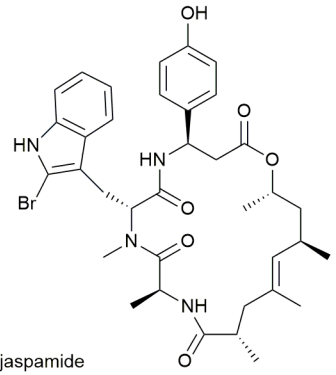
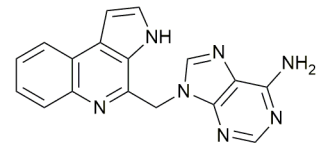
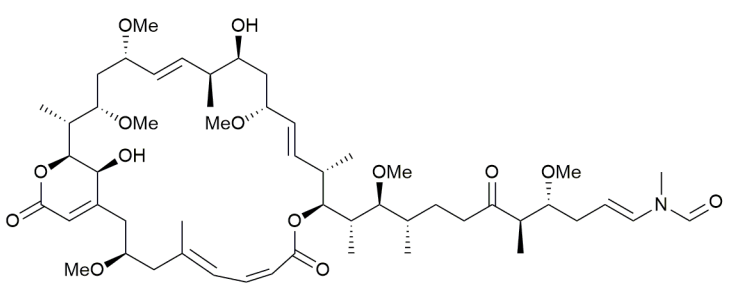


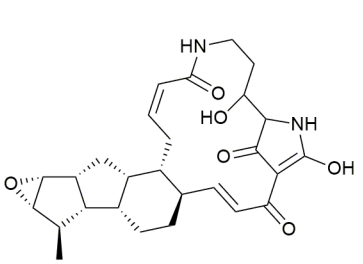
jaspamide
similar compounds in
Chondromyces crocatus (myxobacteria)
1995



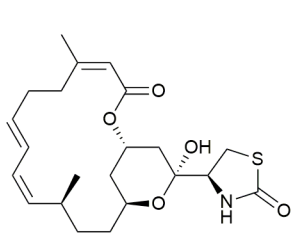
aplidiopsamine A
similar compounds (marinoquinoline A)
in *Rapidithrix* 2006



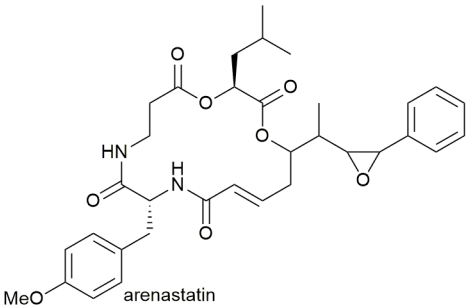
sphinxolide B 1999
similar compounds (scytophycins) from *Scytonema pseudohofmanni*
cyanobacteria 1986



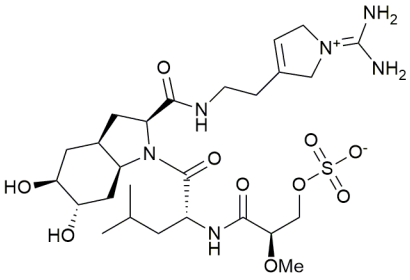
discodermide
similar compounds in
Alteromonas sp (marine)
Streptomyces sp. (terrestrial)



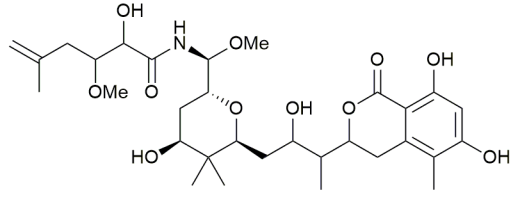
latrunculin A
similar compounds in *Sorangium cellulsoum*
myxobacteria
1996



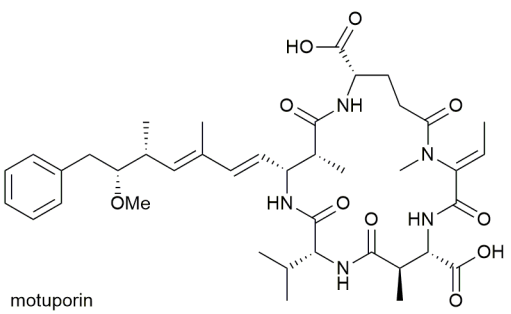
arenastatin
similar cryptophicin isolated from *Nostoc* sp
cyanobacteria in 1990



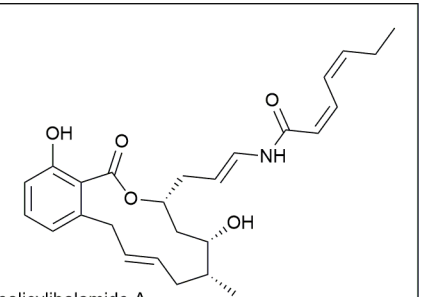
dysinosin A
similar compounds in *Nostoc* sp UHCC0870
cyanobacteria 1977



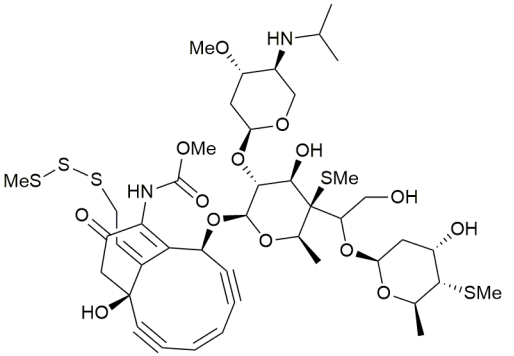
irciniastatin
similar compounds in *Pseudomonas* sp.



motuporin
similar compounds in *Microcystis aerugionsa*,
Planktothrix agardhii cyanobacteria 1988



salicylihalamide A
similar compounds in *Chondromyces* sp.
proteobacteria 1998



namenamicin
similar to calicheamicins from *Micromonospora* 1985

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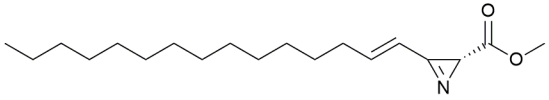
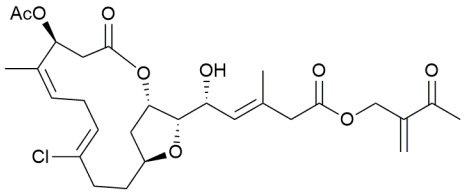
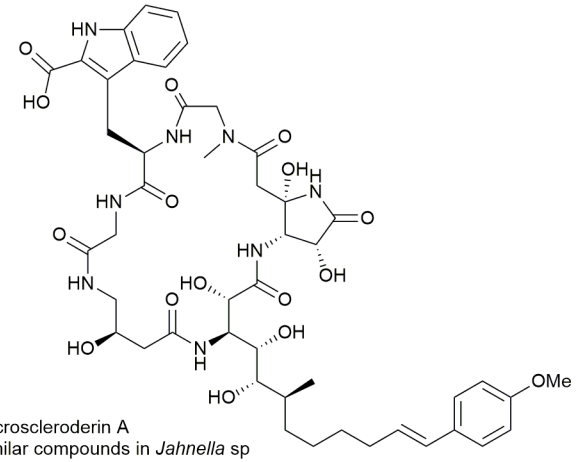


dysidazirine
similar compounds in *Cladora* sp cyanobacrteria 2022



haterumalide B
similar compounds in *Serratia marcescens* 1999



microscleroderin A
similar compounds in *Jahnella* sp
Sorangium pellulosum 2013