

Marine natural products (2024) 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	NHCL	normal human cell line
ACE 2	angiotensin 1 converting enzyme 2	NMCL	normal mammalian cell line
AChE	acetylcholine esterase	Nrf2	nuclear factor erythroid 2-related factor 2
activ.	activity	NT	not tested
AKR1B1	aldo-keto reductase family 1, member B1	PAX3-FOXO1	paired box gene 3 forkhead box protein O1
anti-inflam.	antiinflammatory	<i>P. aeruginosa</i>	<i>Pseudomonas aeruginosa</i>
antioxid.	antioxidant	<i>P. falciparum</i>	<i>Plasmodium falciparum</i>
bact.	Bacteria	PDE4	phosphodiesterase 4
CDK7	cyclin-dependent kinase 1	PI3K	Phosphoinositide 3-kinase
CL	cell line	PL	pancreatic lipase
cytotox.	cytotoxicity/cytotoxic	prod.	production
DSS	dextran sulfate sodium salt	pot.	potent
ERK1/2	extracellular signal-regulated kinases 1 and 2	prod.	production
HLCL	human leukemia cell line	purif.	purify/purified
HMG-CoA	3-hydroxy-3-methylglutaryl-coenzyme A	PTP1B	protein-tyrosine phosphatase 1B
HTCL	human tumour cell line	PTP	protein-tyrosine phosphatase
hTRPA1	transient receptor potential ankyrin 1	rac.	racemic mixture
IA	inactive	RT	reverse transcriptase
IL-6	interleukin 6	SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
inhib.	inhibitor/inhibition/inhibitory	<i>S. aureus</i>	<i>Staphylococcus aureus</i>
isol.	isolated	stereochem.	stereochemistry
JNK	c-Jun N-terminal kinase	struct.	structure
MIC	minimum inhibitory concentration	synth.	synthesis/synthetic
<i>M. tuberculosis</i>	<i>Mycobacterium tuberculosis</i>	TCL	tumour cell line
mod.	moderate	<i>T. b. rhodesiense</i>	<i>Trypanosoma brucei rhodesiense</i>
microb.	microbial, microbe	<i>T. cruzi</i>	<i>Trypanosoma cruzi</i>
mixt.	mixture	TNF- α	tumour necrosis factor alpha
MTCL	murine tumour cell line	TRAP	tartrate-resistant acid phosphatase
NA	neuroaminidase	TRPA1	transient receptor potential ankyrin 1
NO	nitrous oxide	XRD	X-ray diffraction analysis
norm.	normal		

1.2 Biological activity definitions

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

Potent (pot.) activity: $IC_{50} < 100 \text{ nM}$

Moderate (mod.) activity: $IC_{50} < 1 \mu M$

Weak activity: $IC_{50} < 10 \mu M$

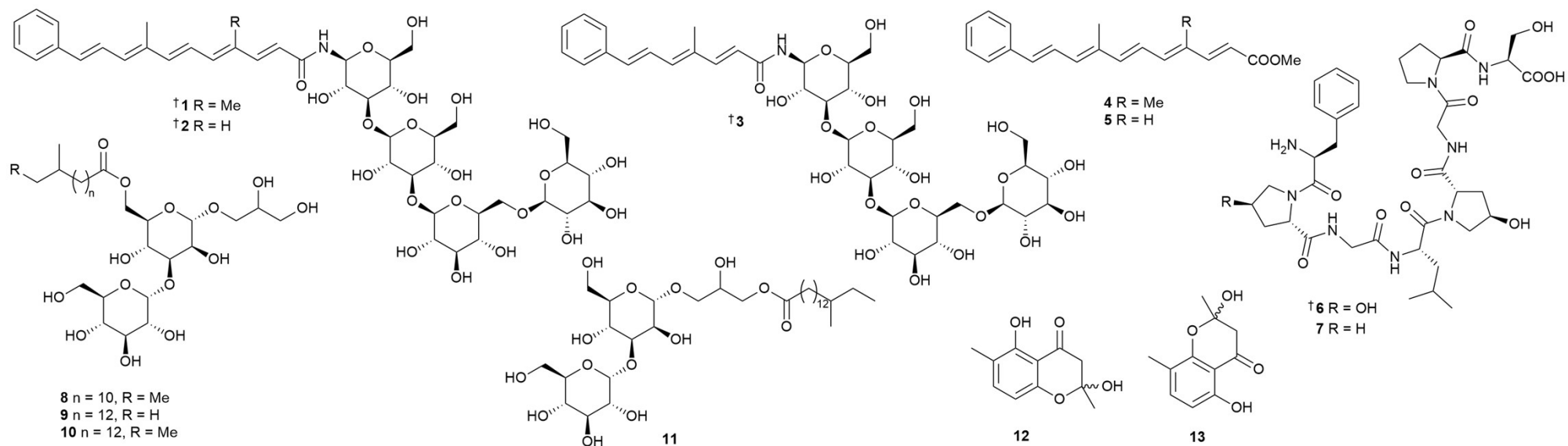
Antibacterial and antifungal activity ($MIC < 32 \mu g/mL$, $< 64 \mu M$ based on MW 500 Da); any activity reported at a higher dose is deemed inactive (IA)

Potent (pot.) activity: $MIC < 1 \mu g/mL$

Moderate (mod.) activity: $MIC < 8 \mu g/mL$

Weak activity: $MIC < 32 \mu g/mL$

2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria

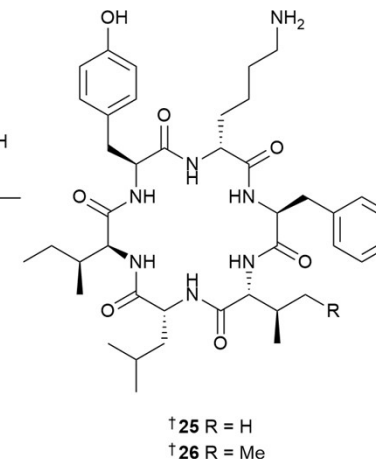
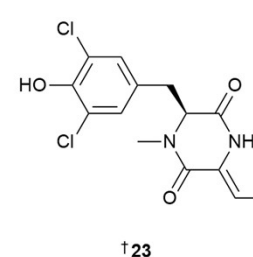
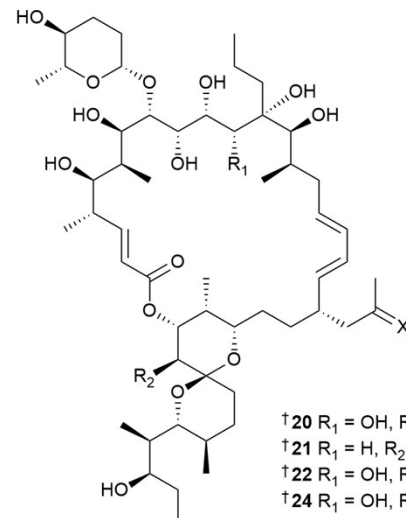
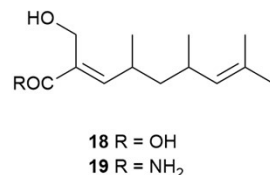
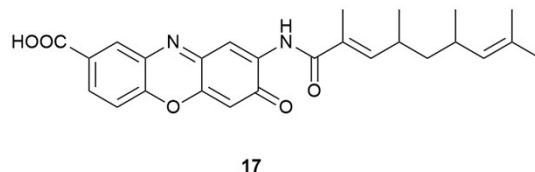
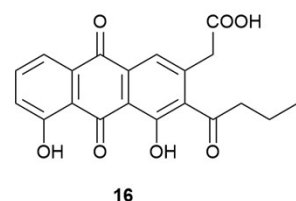
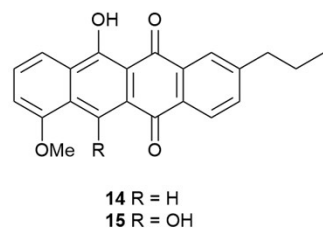


- 3 Actinobacteria *Actinomadura* sp. // (sediment) Xuande Qundao, Sansa City, Hainan Province, China // Maduraflavacins A–E, unusual phenyl polyene metabolites produced by a rare marine-derived *Actinomadura* sp.
 1 // N // maduraflavacin A // IA vs 2 bact. strains.
 2 // N // maduraflavacin B // IA vs 2 bact. strains.
 3 // N // maduraflavacin C // IA vs 2 bact. strains.
 4 // N // maduraflavacin D // IA vs 2 bact. strains.
 5 // N // maduraflavacin E // IA vs 2 bact. strains.
- 4 Actinobacteria *Cellulosimicrobium funkei* // (alga, *Codium tomentosum*) Portugal // Cellulamides: a new family of marine-sourced linear peptides from the underexplored *Cellulosimicrobium* genus
 6 // N // cellulamide A // IA vs 3 bact. strains; IA vs 1 fungus; IA vs 5 HTCLs.
 7 // N // cellulamide B // NT.
- 5 Actinobacteria *Microbacterium testaceum* // (sponge, *Tedania brasiliensis*) Arraial do Cabo, Rio de Janeiro, Brazil // Testacosides A–D, glycosylated lipids produced by *Microbacterium testaceum* isolated from *Tedania brasiliensis*
 8 // N // testacoside A // IA vs *P. falciparum*.
 9 // N // testacoside B // IA vs *P. falciparum*.
 10 // N // testacoside C // IA vs *P. falciparum*.
 11 // N // testacoside D // NT.
- 6 Actinobacteria *Microbispora* sp. // (sponge) Cape Hedo, Okinawa, Japan // Okichromanone, a new antiviral chromanone from a marine-derived *Microbispora*
 12 // N // okichromanone // IA vs 2 virus strains.
 13 // N // okichromanone // IA vs 2 virus strains.

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Compound number // Status // Compound name // Biological activity and Other information

2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria

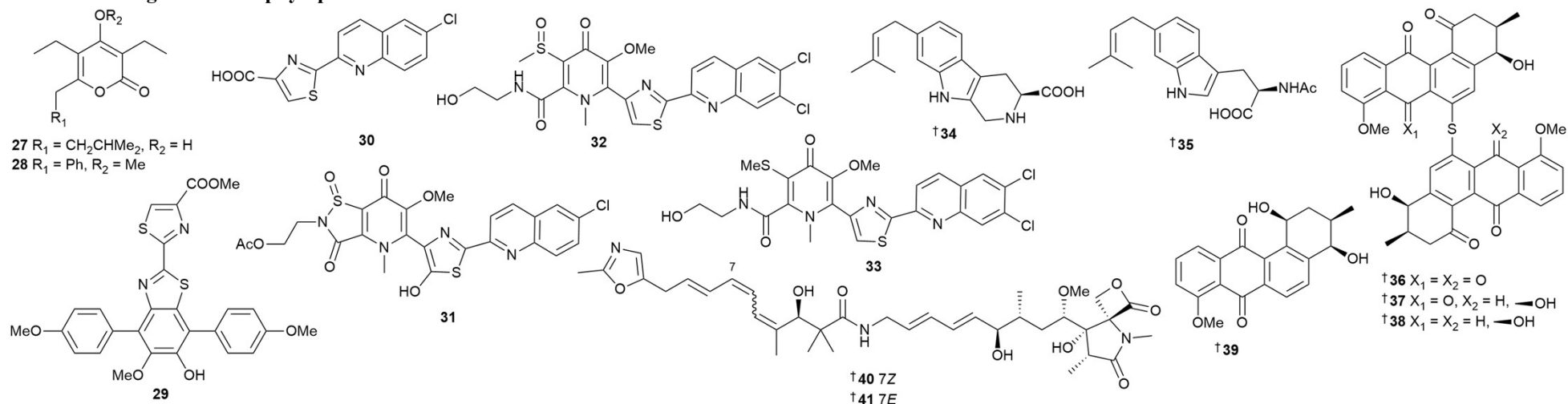


- 7 Actinobacteria *Micromonospora* sp. // (ascidian, *Eudistoma vannamei*) Taíba Beach, Ceará state, Brazil // Further polycyclic quinones of *Micromonospora* sp.
14 // N // 12-hydroxy-4-methoxy-9-propyltetracene-6,11-dione // NT.
15 // N // 5,12-dihydroxy-4-methoxy-9-propyltetracene-5,12-dione // NT.
16 // N // 4,6-dihydroxy-3-methoxycarbonyl-methyl-6a-(oxobutyl)-5,12-anthraquinone // NT.
- 8 Actinobacteria *Micromonospora* sp // (sediment) Dongshi salt field, Jinjiang, Fujian, China // Three nona-2,7-dienoic acid derivatives from saltern derived *Micromonospora* sp. FXY415
17 // N // apocimycin A // IA vs 1 HTCL, IA vs 2 bact. strains; IA vs 2 fungal strains.
18 // N // apocimycin B // IA vs 1 HTCL, IA vs 2 bact. strains; IA vs 2 fungal strains.
19 // N // apocimycin C // IA vs 1 HTCL, IA vs 2 bact. strains; IA vs 2 fungal strains.
- 9 Actinobacteria *Micromonospora* sp. // (seawater) // Antimicrobial spiroketal macrolides and dichloro-diketopiperazine from *Micromonospora* sp. FIMYZ51
20 // N // 43-oxy-IB96212 // IA to weak activ. vs 2 HTCLs.
21 // N // 11-dehydroxy-IB96212 // IA to weak activ. vs 2 HTCLs.
22 // N // 46-methy-IB96212 // IA vs 2 HTCLs.
23 // N // (R,Z)-6-(3,5-dichloro-4-hydroxybenzyl)-3-ethylidene-1-methylpiperazine-2,5-dione // IA vs 2 HTCLs.
24 // R // IB96212 // IA vs 2 HTCLs; XRD.
- 10 Actinobacteria *Nocardiopsis* *maritima* // (leaf, stem, and root, *Suaeda maritima*) Songdo-dong Incheon, Republic of Korea // Genomic and metabolomic analyses of *Nocardiopsis maritima* YSL2 as the mycorrhizosphere bacterium of *Suaeda maritima* (L.) Dumort
25 // N // maritiamide A // IA to mod. activ vs 4 bact. strains.
26 // N // maritiamide B // IA to mod. activ vs 4 bact. strains.

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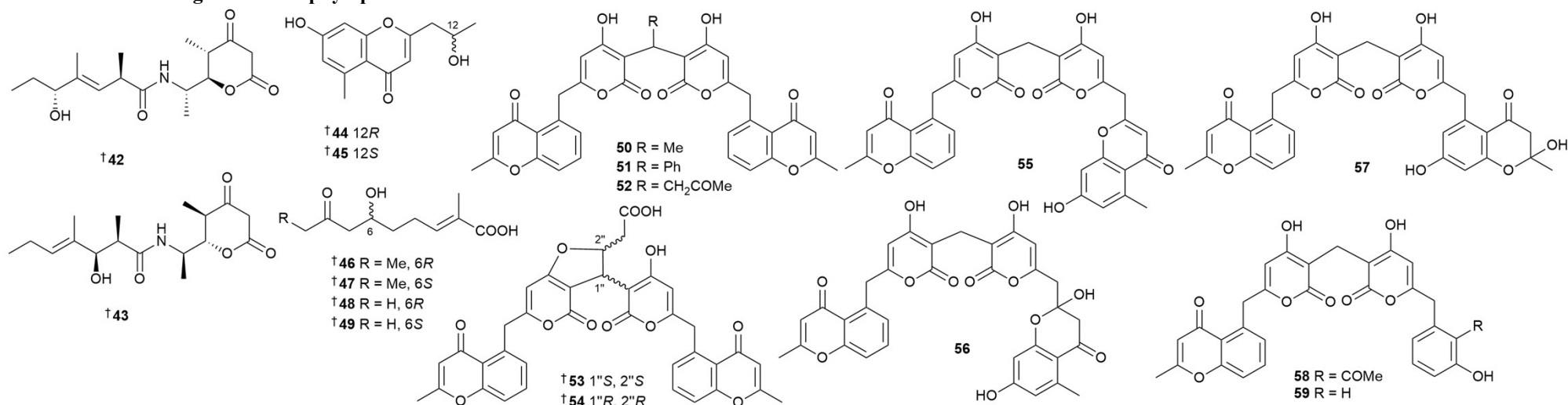


- 11 Actinobacteria *Nocardioopsis* sp. // (sediment) South China Sea // Antibacterial p-terphenyl and α -pyrone derivatives isolated from the marine-derived actinomycete *Nocardioopsis* sp. HDN154086
 27 // N // nocardipyronone D // IA vs 4 HTCLs; IA vs 5 bact. strains.
 28 // N // nocardipyronone E // IA vs 4 HTCLs; IA vs 5 bact. strains.
 29 // N // nocarphenyl I // IA vs 4 HTCLs; IA to mod. activ. vs 6 bact. strains; XRD.
- 12 Actinobacteria *Saccharomonospora* sp. // (sediment) La Jolla submarine canyon // Lodopyridones D – G from a marine-derived bacterium *Saccharomonospora* sp.
 30 // N // lodopyridone D // NT.
 31 // N // lodopyridone E // IA vs antioxidant.
 32 // N // lodopyridone F // IA vs antioxidant.
 33 // N // lodopyridone G // IA vs antioxidant.
- 13 Actinobacteria *Saccharomonospora* sp. // (sediment) Muan, Republic of Korea // Isolation and characterization of bioactive compounds from *Saccharomonospora* sp. CMS18 and their antifungal properties
 34 // N // penipaline D // IA vs 4 fungal strains.
 35 // N // N-acetyl-6-dimethylallyl-L-tryptophan // IA vs 4 fungal strains.
- 14 Actinobacteria *Spongiactinospora rosea* // (sponge, *Craniella* sp.) South China Sea // Spongisulfins A-C, three S-bridged angucycline dimers from *Spongiactinospora rosea* LHW63015 and their gut epithelium protective activity in *Drosophila melanogaster*
 36 // N // spongisulfon A // IA vs 1 bact. strain; IA vs 1 HTCL; pot. activ. vs DSS-induced gut damage in *D. melanogaster*
 37 // N // spongisulfon B // IA vs 1 bact. strain; IA vs 1 HTCL; XRD.
 38 // N // spongisulfon C // IA vs 1 bact. strain; IA vs 1 HTCL.
 39 // N // rubiginone A3 // IA vs 1 bact. strain; IA vs 1 HTCL; XRD.
- 15 Actinobacteria *Streptomyces* sp. // (sediment) Anmyeon Island, Republic of Korea // Discovery of terminal oxazole-bearing natural products by a targeted metabologenomic approach
 40 // N // methyl-oxazolomycin A // IA to mod. activ. vs 7 HTCLs.
 41 // N // methyl-oxazolomycin B // IA to mod. activ. vs 7 HTCLs.

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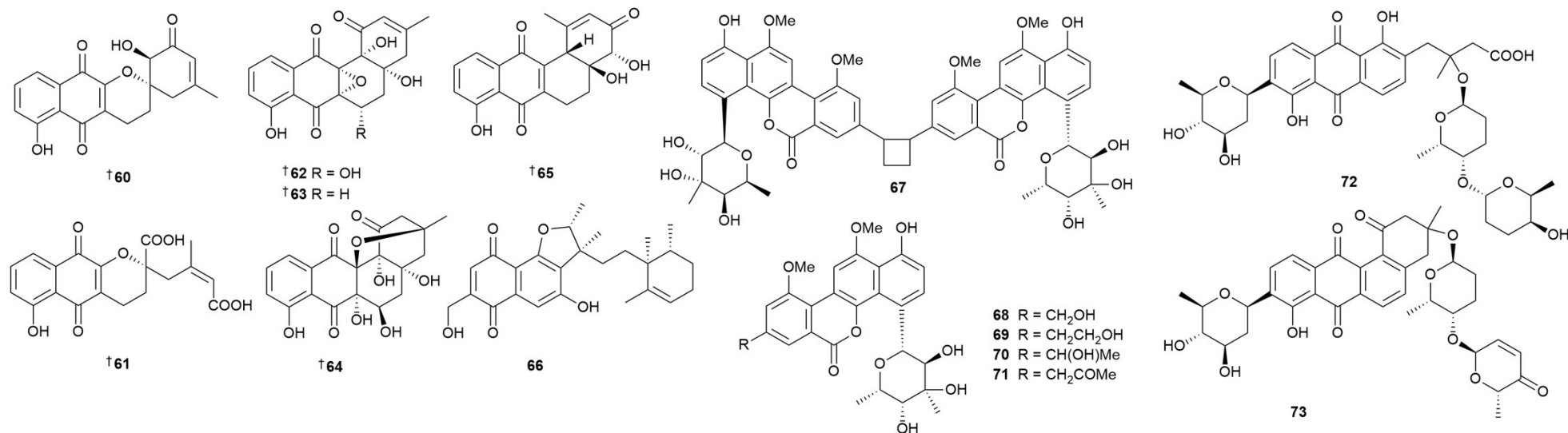


- 16** Actinobacteria *Streptomyces* sp. // (sediment) Daishan island, Zhoushan, Zhejiang province, China // New alpiniamide-type polyketide with antibiofilm activities from the marine-derived *Streptomyces* sp. ZS-A65
 42 // N // alpiniamide H // IA vs 1 bact. strain.
 43 // N // alpiniamide I // IA vs 1 bact. strain.
- 17** Actinobacteria *Streptomyces* sp. // (coral) South China Sea // Discovery of a novel chromone enantiomer and the precursors of nonactic acid from the coral-reef-derived *Streptomyces* sp. SCSIO 66814
 44 // N // (–)-aloesol // IA vs 4 bact. strains; IA vs antioxid.
 45 // M // (+)-aloesol // IA vs 4 bact. strains; IA vs antioxid.
 46 // N // (–)-6-hydroxy-2-methyl-8-oxodec-2-enoic acid // IA vs 4 bact. strains; IA vs antioxid.
 47 // N // (+)-6-hydroxy-2-methyl-8-oxodec-2E-enoic acid // IA vs 4 bact. strains; IA vs antioxid.
 48 // M // (–)-6-hydroxy-2-methyl-8-oxonon-2E-enoic acid // IA vs 4 bact. strains; IA vs antioxid.
 49 // M // (+)-6-hydroxy-2-methyl-8-oxonon-2E-enoic acid // IA vs 4 bact. strains; IA vs antioxid.
- 18** Actinobacteria *Streptomyces* sp. // (sediment) Hat Chao Mai National Park, Thailand // Nonenzymatic sequestering of formaldehyde into the antibiotic methylene-bridged dimer phaeochromycin F by *Streptomyces* sp. OUCMDZ-4982 as a possible multipronged chemical defense mechanism
 50 // N // phaeochromycin M // IA vs 5 bact. strains; IA vs 2 fungal strains.
 51 // N // phaeochromycin N // IA vs 5 bact. strains; IA vs 2 fungal strains.
 52 // N // phaeochromycin O // IA vs 5 bact. strains; IA vs 2 fungal strains.
 53 // N // (1"S,2"S)-phaeochromycin P // IA vs 5 bact. strains; IA vs 2 fungal strains.
 54 // N // (1"R,2"R)-phaeochromycin P // IA vs 5 bact. strains; IA vs 2 fungal strains.
 55 // N // phaeochromycin Q // IA vs 5 bact. strains; IA vs 2 fungal strains.
 56 // N // phaeochromycin R // IA vs 5 bact. strains; IA vs 2 fungal strains.
 57 // N // phaeochromycin S // IA vs 5 bact. strains; IA vs 2 fungal strains.
 58 // N // phaeochromycin T // IA vs 5 bact. strains; IA vs 2 fungal strains.
 59 // N // phaeochromycin U // IA vs 5 bact. strains; IA vs 2 fungal strains.

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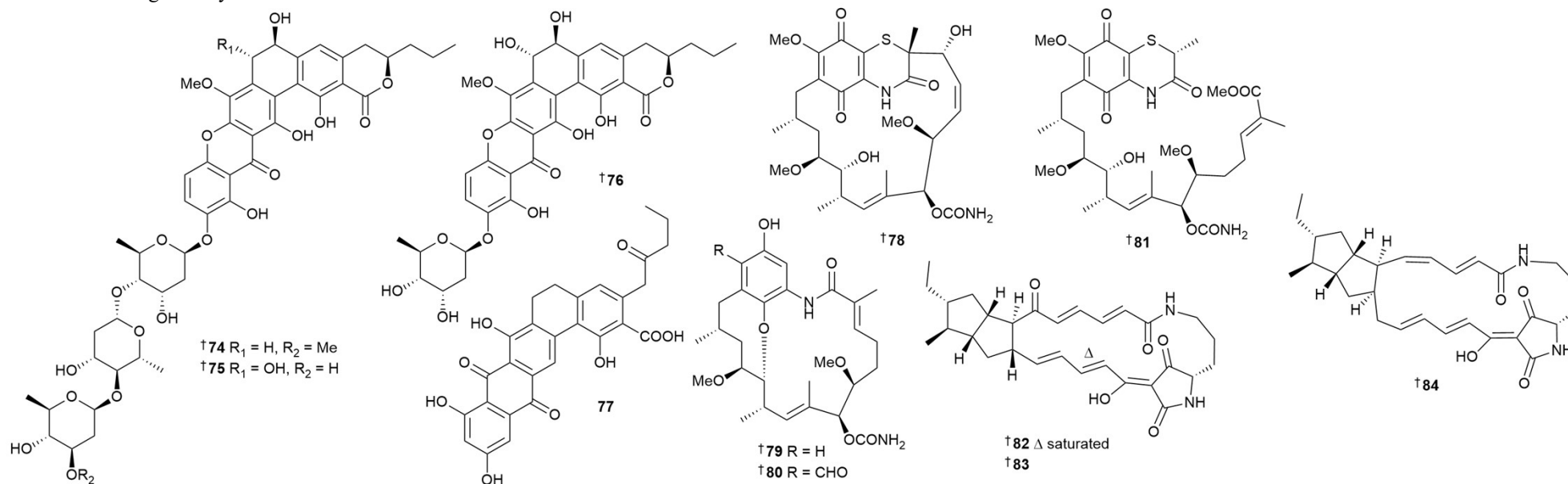
- 19** Actinobacteria *Streptomyces* sp. // (sediment) South China Sea // Biosynthesis of atypical angucyclines unveils new ring rearrangement reactions catalyzed by flavoprotein monooxygenases
60 // N // spirocyclone A // IA vs 6 HTCLs.
61 // N // spirocyclone B // IA vs 6 HTCLs.
62 // N // angumycinone G // IA to weak activ. vs 6 HTCLs; XRD.
63 // N // angumycinone H // IA to mod. activ. vs 6 HTCLs.
64 // N // gephyromycin E // IA vs 6 HTCLs.
65 // N // kanglemycin D // IA to weak activ. vs 6 HTCLs.
- 20** Actinobacteria *Streptomyces aculeoletus* // (sediment) Madeira Archipelago // Novel metabolite madeirone and neomarinone extracted from *Streptomyces aculeoletus* as marine antibiofilm and antifouling agents
66 // N // madeirone // IA vs 5 bact. strains.
- 21** Actinobacteria *Streptomyces* sp. // (sediment) South China Sea // Chrysomycins, anti-tuberculosis C-glycoside polyketides from *Streptomyces* sp. MS751
67 // N // chrysomycin F // IA vs *M. bovis*; IA vs 7 *M. tuberculosis* strains; IA vs 3 bact. strains; IA vs 1 fungus.
68 // N // chrysomycin G // IA vs *M. bovis*; IA vs 7 *M. tuberculosis* strains; IA vs 3 bact. strains; IA vs 1 fungus.
69 // N // chrysomycin H // IA vs *M. bovis*; IA vs 7 *M. tuberculosis* strains; IA vs 3 bact. strains; IA vs 1 fungus.
70 // N // chrysomycin I // IA vs *M. bovis*; IA vs 7 *M. tuberculosis* strains; IA vs 3 bact. strains; IA vs 1 fungus.
71 // N // chrysomycin J // IA vs *M. bovis*; IA vs 7 *M. tuberculosis* strains; IA vs 3 bact. strains; IA vs 1 fungus.
- 22** Actinobacteria *Streptomyces lusitanus* // (sediment) South China Sea // Deciphering the glycosylation steps in the biosynthesis of P-1894B and grincamycin isolated from marine-derived *Streptomyces lusitanus* SCSIO LR32
72 // N // grincamycin V // NT.

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73 // N // grincamycin U // NT.

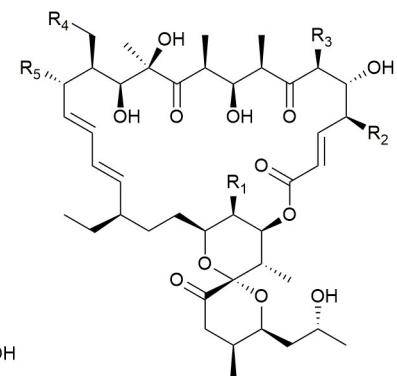
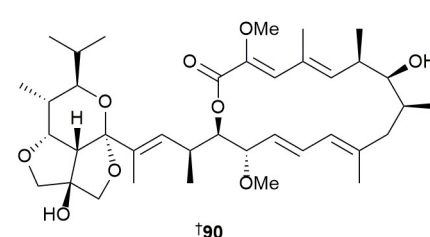
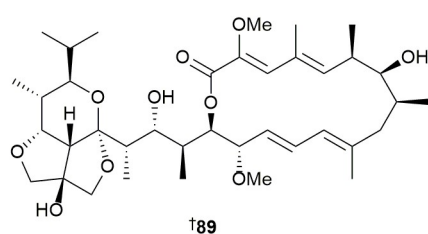
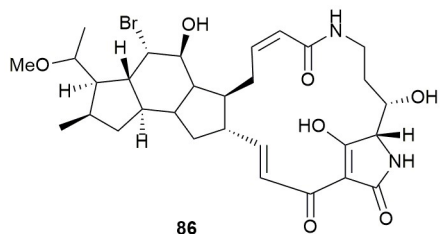
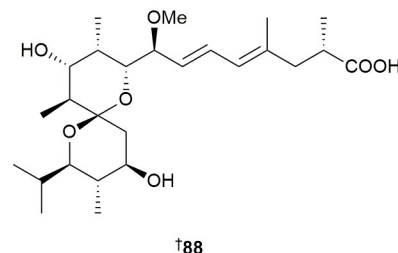
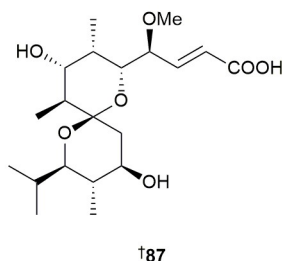
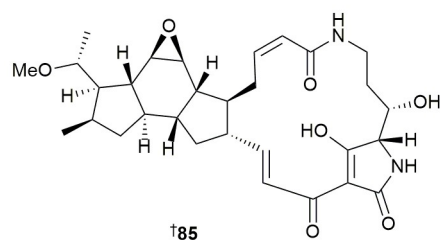


- 23** Actinobacteria *Streptomyces* sp. // (mangrove rhizosphere) Gaoqiao, Zhanjiang, China // Discovery of kebanmycins with antibacterial and cytotoxic activities from the mangrove-derived *Streptomyces* sp. SCSIO 40068
- 74 // N // kebanmycin A // IA to pot. activ. vs 8 bact. strains; mod. activ. vs 2 HTCLs.
- 75 // N // kebanmycin B // IA to mod. activ. vs 8 bact. strains; weak activ. vs 2 HTCLs.
- 76 // N // kebanmycin C // IA to pot. activ. vs 8 bact. strains; IA to mod. activ. vs 2 HTCLs.
- 77 // N // kebanmycin D // IA to weak activ. vs 8 bact. strains; IA vs 2 HTCLs.
- 24** Actinobacteria *Streptomyces* sp. // (sediment) Yongxing Island, Sansha, Hainan, China // Diverse ansamycin derivatives from the marine-derived *Streptomyces* sp. ZYX-F-97 and their antibacterial activities
- 78 // N // 1,19-epithio-geldanamycin A // IA vs 6 bact strains.
- 79 // N // 17-demethoxyherbimycin H // IA vs 6 bact strains.
- 80 // N // herbimycin M // IA vs 6 bact strains.
- 81 // N // seco-geldanamycin B // IA vs 6 bact strains.
- 25** Actinobacteria *Streptomyces* sp. // (sediment) South China Sea // Discovery of aburatubolactams reveals biosynthetic logic for distinct 5/5-type polycyclic tetramate macrolactams
- 82 // N // aburatubolactam D // weak activ. vs 3 HTCLs.
- 83 // N // aburatubolactam E // weak activ. vs 3 HTCLs.
- 84 // N // aburatubolactam F // IA vs 3 HTCLs.

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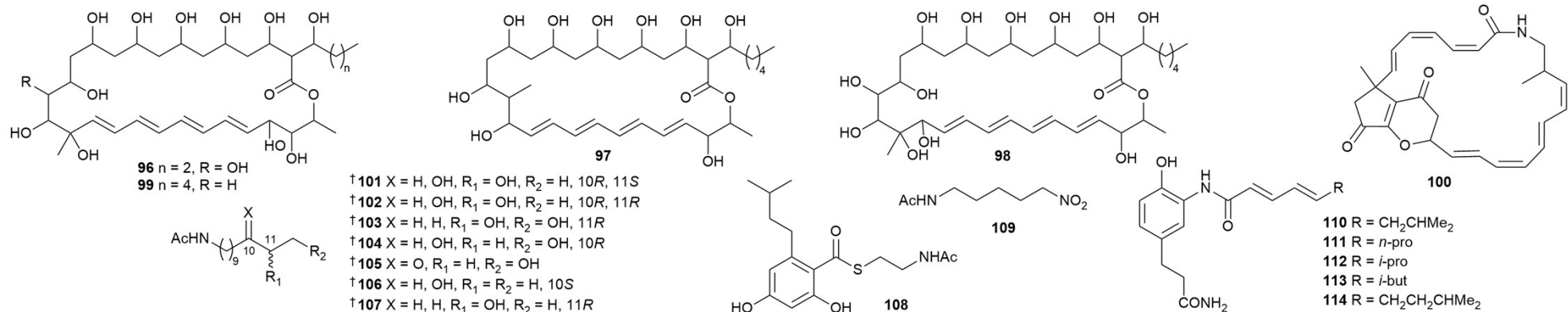
- †91 R₁ = H, R₂ = R₃ = Me, R₄ = R₅ = H
 †92 R₁ = Me, R₂ = H, R₃ = Me, R₄ = R₅ = H
 †93 R₁ = R₂ = Me, R₃ = R₄ = R₅ = H
 †94 R₁ = R₂ = R₃ = R₄ = Me, R₅ = H
 †95 R₁ = R₂ = R₃ = Me, R₄ = H, R₅ = OH

- 26 Actinobacteria *Streptomyces* sp. // (sediment) Tokyo Bay, Japan // New polycyclic tetramate macrolactams with antimycobacterial activity produced by marine-derived *Streptomyces* sp. KKMA-0239
 85 // N // hydroxycapsimycin // IA vs 4 *Mycobacterium* strains; XRD.
- 86 // N // brokamycin // IA to weak activ. vs 4 *Mycobacterium* strains; XRD.
- 27 Actinobacteria *Streptomyces cavourensis* // (coral) South China Sea // Genome-guided discovery of two undescribed 6,6-spiroketal polyketides and stereochemical correction of bafilomycins P and Q from the marine-derived *Streptomyces* sp. SCSIO 66814
 87 // N // streptospirodienoic acid D // IA vs 2 HTCLs.; IA vs 4 bact. strains.
 88 // N // streptospirodienoic acid E // IA vs 2 HTCLs. ; IA vs 4 bact. strains.
 89 // R // bafilomycin P // mod. activ. vs 2 HTCLs; IA vs 4 bact. strains.; XRD.
 90 // R // bafilomycin Q // mod. activ. vs 2 HTCLs; IA vs 4 bact. strains.
- 28 Actinobacteria *Streptomyces* sp. // (sediment) Laoshan district, Qingdao, China // Structures, biosynthesis, and bioactivity of oligomycins from the marine-derived *Streptomyces* sp. FXY-T5
 91 // N // 24-lumooligomycin B // IA to weak activ. vs 3 HTCLs.
 92 // N // 4-lumooligomycin B // IA to weak activ. vs 3 HTCLs.
 93 // N // 6-lumooligomycin B // IA vs 3 HTCLs.
 94 // N // 40-homooligomycin B // IA to weak activ. vs 3 HTCLs.
 95 // N // 15-hydroxy-oligomycin B // IA vs 3 HTCLs.

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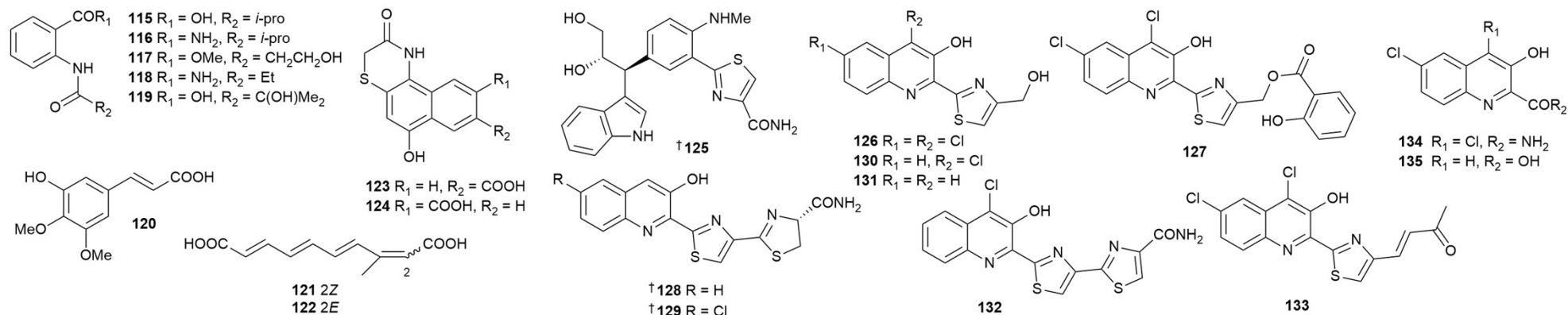


- 29** Actinobacteria *Streptomyces hiroshimensis* // (probably leaf mangrove) West coast of Hainan, China // New polyene macrolide compounds from mangrove-derived strain *Streptomyces hiroshimensis* GXIMD 06359: isolation, antifungal activity, and mechanism against *Talaromyces marneffei*
96 // N // antifungalmycin B // weak activ. vs 1 fungus.
97 // N // antifungalmycin C // IA vs 1 fungus.
98 // N // antifungalmycin D // IA vs 1 fungus.
99 // N // antifungalmycin E // weak activ. vs 1 fungus.
- 30** Actinobacteria *Streptomyces* sp. // (sponge) Weddell Sea, Antarctica // The discovery of weddellamycin, a tricyclic polyene macrolactam antibiotic from an Antarctic deep-sea-derived *Streptomyces* sp. DSS69, by heterologous expression
100 // N // weddellamycin // IA to weak activ vs 4 HTCs; IA to pot. activ vs 8 bact. strains; mod. activ vs 1 fungus.
- 31** Actinobacteria *Streptomyces albus* // (sediment) Dokdo Island, Republic of Korea // Albusamides A–G: hydroxylated fatty amine derivatives from the deep-sea-derived actinomycete *Streptomyces albus* 228DD-066 and their cytotoxic activity
101 // N // albusamide A // weak activ. vs 7 HTCLs; IA vs 7 HLCLs; IA vs 1 NMCL.
102 // N // albusamide B // weak activ. vs 7 HTCLs; IA to weak. activ. vs 7 HLCLs; weak activ. vs 1 NMCL.
103 // N // albusamide C // mod. activ. vs 7 HTCLs; IA to pot. activ. vs 7 HLCLs; pot. activ. vs 1 NMCL.
104 // N // albusamide D // weak activ. vs 7 HTCLs; IA to weak. activ. vs 7 HLCLs; weak activ. vs 1 NMCL.
105 // N // albusamide E // IA vs 7 HTCLs; IA vs 7 HLCLs; IA vs 1 NMCL.
106 // N // albusamide F // weak activ. vs 7 HTCLs; IA to weak. activ. vs 7 HLCLs; IA vs 1 NMCL.
107 // N // albusamide G // IA vs 7 HTCLs; IA vs 7 HLCLs; IA vs 1 NMCL.
- 32** Actinobacteria *Streptomyces* sp. // (sediment) Zhoushan City, Zhejiang Province, China // Antibiofilm metabolites from marine-derived *Streptomyces* sp. ZS-A31
108 // N // streptothiomycin F // IA vs 1 bact. strain.
109 // M // N-(5-nitropentyl)acetamide // IA vs 1 bact. strain.
- 33** Actinobacteria *Streptomyces parvus* // (sediment) South China Sea // Genome-based mining of carpatamides I–M and their candidate biosynthetic gene cluster
110 // N // carpatamide I // IA vs 3 HTCLs.
111 // N // carpatamide J // IA vs 3 HTCLs.
112 // N // carpatamide K // IA vs 3 HTCLs.
113 // N // carpatamide L // IA vs 3 HTCLs.
114 // N // carpatamide M // IA vs 3 HTCLs.

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Compound number // Status // Compound name // Biological activity and Other information

2 Marine microorganisms and phytoplankton: 2.1 Marine-sourced bacteria

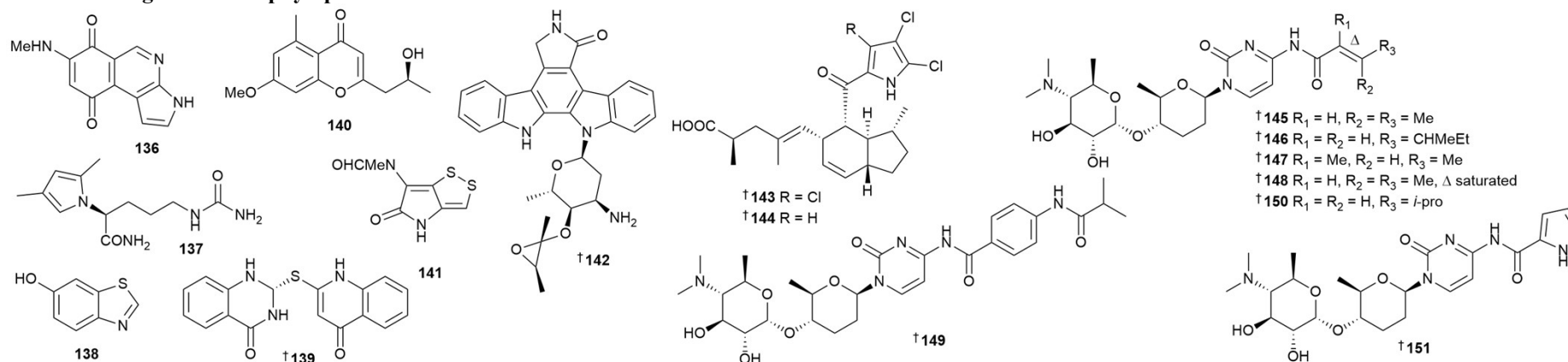


- 34** Actinobacteria *Streptomyces* sp. // (sediment) Jintang Island, Zhoushan, China // Antiproliferative metabolites against glioma cells from the marine-associated actinomycete *Streptomyces* sp. ZZ735
115 // M // 2-(2-methylpropanoylamino)-benzoic acid // IA vs 2 HTCLs.
116 // M // 2-(2-methylpropanoylamino)-benzamide // IA vs 2 HTCLs.
117 // M // methyl 2-(3-hydroxypropanoylamino)-benzoate // IA vs 2 HTCLs.
118 // M // 2-propionylaminobenzamide // IA vs 2 HTCLs.
119 // N // 2-(2-hydroxy-2-methylpropanoylamino)-benzoic acid // IA vs 2 HTCLs.
120 // M // (2*E*)-3-(3-hydroxy-4,5-dimethoxyphenyl)-2-propenoic acid // IA vs 2 HTCLs.
121 // N // streptomycinic acid A // IA vs 2 HTCLs.
122 // N // streptomycinic acid B // IA vs 2 HTCLs.
123 // N // streptonaphthothiazine A // IA vs 2 HTCLs.
124 // N // streptonaphthothiazine B // IA vs 2 HTCLs.
- 35** Actinobacteria *Streptomyces* sp. // (sediment) Jaebu island, Gyeonggi-Do, South Korea // Anithiactin D, a phenylthiazole natural product from mudflat-derived *Streptomyces* sp., suppresses motility of cancer cells
125 // N // anithiactin D // IA vs 3 HTCLs; weak activ. vs motility of 1 HTCL.
- 36** Actinobacteria *Streptomyces* sp. // (sediment) Pearl River Estuary, China // Expanding the chemical diversity of grisechelins via heterologous expression
126 // N // grisechelin E // Mod activ. vs *M. tuberculosis*; XRD.
127 // N // grisechelin F // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
128 // N // grisechelin I // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
129 // N // grisechelin J // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
130 // N // grisechelin K // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
131 // N // grisechelin L // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
132 // N // grisechelin M // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
133 // N // grisechelin N // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
134 // N // grisechelin G // IA vs 2 bact. strains; IA vs *M. tuberculosis*.
135 // N // grisechelin H // IA vs 2 bact. strains; IA vs *M. tuberculosis*.

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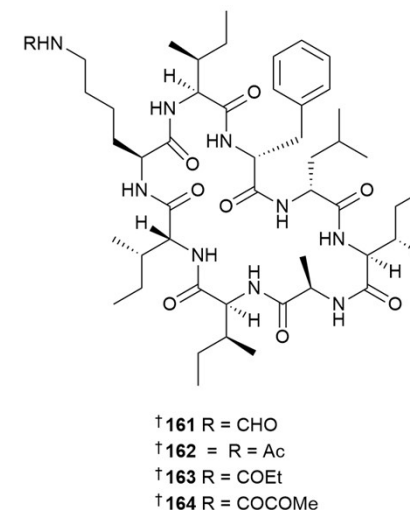
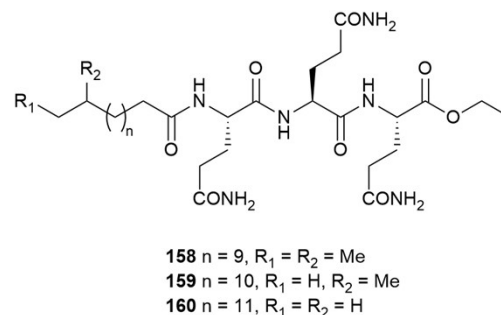
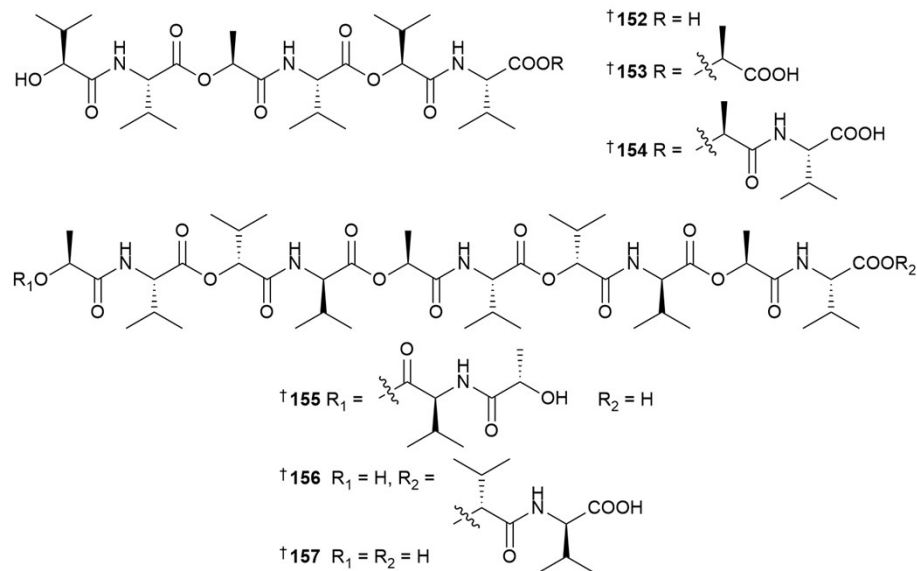


- 37** Actinobacteria *Streptomyces* sp. // (sediment) Mariana Trench // Novel antibacterial alkaloids from the Mariana Trench-derived actinomycete *Streptomyces* sp. SY2255
136 // N // streptoquinoneazaindole A // weak activ. vs 2 bact. strains.
137 // N // streptoureipyrrole A // IA vs 2 bact. strains.
138 // M // 6-hydroxybenzothiazole // IA vs 2 bact. strains.
- 38** Actinobacteria *Streptomyces diastaticus* // (sponge, *Axinellida* sp.) Apo Island, Philippines // Quinosumycin, a novel anti-MRSA thioether-linked quinolinone-quinazolinone heterodimer from a marine actinomycete *Streptomyces diastaticus* NBU2966
139 // N // quinosumycin // IA to mod. activ vs 4 bact. strains.
140 // N // chromycone // IA to weak activ vs 4 bact. strains.
- 39** Actinobacteria *Streptomyces* sp. // (ascidian, *Eudistoma vancouveri*) Taiba beach, Ceara, Brazil // Anxiolytic effects of *N*-(4,5-dihydro-5-oxo-1,2-dithiolo-[4,3,*b*]-pyrrole-6-yl)-*N*-methylformamide, a pyrroloformamide isolated from a marine *Streptomyces* sp., in adult zebrafish by the 5-HT system
141 // N // *N*-(4,5-dihydro-5-oxo-1,2-dithiolo-[4,3,*b*]-pyrrol-6-yl)-*N*-methylformamide // Non-toxic to zebrafish; weak anxiolytic effect in zebrafish.
- 40** Actinobacteria *Streptomyces* sp. // (sediment) Zhoushan City, Zhejiang Province, China // Cytotoxic and antifungal staurosporine derivatives from marine-derived actinomycete *Streptomyces* sp. ZS-A121
142 // N // streptomholyrine A // mod. activ vs 1 HTCL; IA vs 2 bact. strains; weak activ. vs 1 fungus.
- 41** Actinobacteria *Streptomyces* sp. // (sediment) Channel Islands, California, USA // Pattern-based genome mining guides discovery of the antibiotic indanopyrrole A from a marine streptomycete
143 // N // indanopyrrole A // IA to pot. activ vs 9 bact. strains.; weak activ. vs 1 HTCL.
144 // N // indanopyrrole B // IA vs 4 bact. strains.
- 42** Actinobacteria *Streptomyces* sp. // (sediment) Tateyama city, Chiba, Japan // Mavintramycin A is a promising antibiotic for treating *Mycobacterium avium* complex infectious disease
145 // N // mavintramycin A // mod to pot. activ. vs 4 mycobacterial strains; IA vs 1 HLCL; IA vs 4 bact. strains; IA vs 2 fungal strains
146 // N // mavintramycin B // weak to mod. activ. vs 4 mycobacterial strains.
147 // N // mavintramycin C // IA to mod. activ. vs 4 mycobacterial strains.
148 // N // mavintramycin D // weak to mod. activ. vs 4 mycobacterial strains.
149 // N // mavintramycin E // IA to weak activ. vs 4 mycobacterial strains.
150 // N // mavintramycin F // mod to pot. activ. vs 4 mycobacterial strains.
151 // N // mavintramycin G // weak to pot. activ. vs 4 mycobacterial strains.

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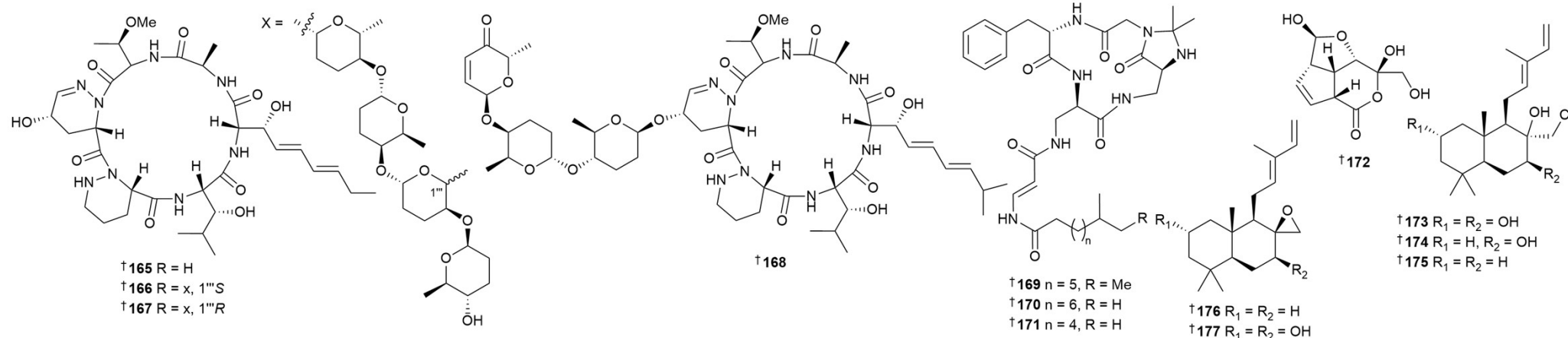


- 44** Actinobacteria *Streptomyces* sp. // (sediment) Pohang, South Korea // Three new depsipeptides, homiamides A–C, isolated from *Streptomyces* sp., ROA-065
152 // N // homiamide A // IA to weak activ. vs 6 bact. strains; IA to weak antifouling activ. vs 5 bact. strains.
153 // N // homiamide B // IA to weak activ. vs 6 bact. strains; IA to weak antifouling activ. vs 5 bact. strains.
154 // N // homiamide C // IA to weak activ. vs 6 bact. strains; IA to weak antifouling activ. vs 5 bact. strains.
- 45** Actinobacteria *Streptomyces cavourensis* // (annelid, *Paraleonnates uschakovi*) Jung-gu, Incheon, Republic of Korea // Cavomycins A–C, linear oligomer depsipeptides from an annelid-associated *Streptomyces cavourensis*
155 // N // cavomycin A // IA vs 1 HTCL.
156 // N // cavomycin B // weak activ. vs 1 HTCL.
157 // N // cavomycin C // IA vs 1 HTCL.
- 46** Actinobacteria *Streptomyces albidoflavus* // (ascidian, *Halocynthia papillosa*) Mediterranean Sea, Turkiye // Discovery of the lipopeptides alubactins A–H from *Streptomyces albidoflavus* RKJM0023 via chemical elicitation with rhamnolipids and synthesis of alubactin A
158 // N // alubactin A // NT; total synth. achieved.
159 // N // alubactin B // NT.
160 // N // alubactin C // NT.
- 47** Actinobacteria *Streptomyces* sp. // (sediment) Shorncliffe, Queensland, Australia // Australian marine and terrestrial *Streptomyces*-derived surugamides, and synthetic analogs, and their ability to inhibit *Dirofilaria immitis* (heartworm) motility
161 // N // acyl-surugamide A1 // IA vs 1 HTCL; IA vs *D. immitis* mf motility, IA vs *H. contortus* larval development.
162 // N // acyl-surugamide A2 // IA vs 1 HTCL; IA vs *D. immitis* mf motility, IA vs *H. contortus* larval development.
163 // N // acyl-surugamide A3 // weak activ. vs 1 HTCL; IA vs *D. immitis* mf motility, IA vs *H. contortus* larval development.
164 // N // acyl-surugamide A4 // IA vs 1 HTCL; IA vs *D. immitis* mf motility, IA vs *H. contortus* larval development.

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Compound number	Status	Compound name	Biological activity and Other information
1	Active	Compound 1	Activity 1, Info 1
2	Inactive	Compound 2	Activity 2, Info 2
3	Pending	Compound 3	Activity 3, Info 3
4	Active	Compound 4	Activity 4, Info 4
5	Inactive	Compound 5	Activity 5, Info 5
6	Pending	Compound 6	Activity 6, Info 6
7	Active	Compound 7	Activity 7, Info 7
8	Inactive	Compound 8	Activity 8, Info 8
9	Pending	Compound 9	Activity 9, Info 9
10	Active	Compound 10	Activity 10, Info 10
11	Inactive	Compound 11	Activity 11, Info 11
12	Pending	Compound 12	Activity 12, Info 12
13	Active	Compound 13	Activity 13, Info 13
14	Inactive	Compound 14	Activity 14, Info 14
15	Pending	Compound 15	Activity 15, Info 15
16	Active	Compound 16	Activity 16, Info 16
17	Inactive	Compound 17	Activity 17, Info 17
18	Pending	Compound 18	Activity 18, Info 18
19	Active	Compound 19	Activity 19, Info 19
20	Inactive	Compound 20	Activity 20, Info 20
21	Pending	Compound 21	Activity 21, Info 21
22	Active	Compound 22	Activity 22, Info 22
23	Inactive	Compound 23	Activity 23, Info 23
24	Pending	Compound 24	Activity 24, Info 24
25	Active	Compound 25	Activity 25, Info 25
26	Inactive	Compound 26	Activity 26, Info 26
27	Pending	Compound 27	Activity 27, Info 27
28	Active	Compound 28	Activity 28, Info 28
29	Inactive	Compound 29	Activity 29, Info 29
30	Pending	Compound 30	Activity 30, Info 30
31	Active	Compound 31	Activity 31, Info 31
32	Inactive	Compound 32	Activity 32, Info 32
33	Pending	Compound 33	Activity 33, Info 33
34	Active	Compound 34	Activity 34, Info 34
35	Inactive	Compound 35	Activity 35, Info 35
36	Pending	Compound 36	Activity 36, Info 36
37	Active	Compound 37	Activity 37, Info 37
38	Inactive	Compound 38	Activity 38, Info 38
39	Pending	Compound 39	Activity 39, Info 39
40	Active	Compound 40	Activity 40, Info 40
41	Inactive	Compound 41	Activity 41, Info 41
42	Pending	Compound 42	Activity 42, Info 42
43	Active	Compound 43	Activity 43, Info 43
44	Inactive	Compound 44	Activity 44, Info 44
45	Pending	Compound 45	Activity 45, Info 45
46	Active	Compound 46	Activity 46, Info 46
47	Inactive	Compound 47	Activity 47, Info 47
48	Pending	Compound 48	Activity 48, Info 48
49	Active	Compound 49	Activity 49, Info 49
50	Inactive	Compound 50	Activity 50, Info 50
51	Pending	Compound 51	Activity 51, Info 51
52	Active	Compound 52	Activity 52, Info 52
53	Inactive	Compound 53	Activity 53, Info 53
54	Pending	Compound 54	Activity 54, Info 54
55	Active	Compound 55	Activity 55, Info 55
56	Inactive	Compound 56	Activity 56, Info 56
57	Pending	Compound 57	Activity 57, Info 57
58	Active	Compound 58	Activity 58, Info 58
59	Inactive	Compound 59	Activity 59, Info 59
60	Pending	Compound 60	Activity 60, Info 60
61	Active	Compound 61	Activity 61, Info 61
62	Inactive	Compound 62	Activity 62, Info 62
63	Pending	Compound 63	Activity 63, Info 63
64	Active	Compound 64	Activity 64, Info 64
65	Inactive	Compound 65	Activity 65, Info 65
66	Pending	Compound 66	Activity 66, Info 66
67	Active	Compound 67	Activity 67, Info 67
68	Inactive	Compound 68	Activity 68, Info 68
69	Pending	Compound 69	Activity 69, Info 69
70	Active	Compound 70	Activity 70, Info 70
71	Inactive	Compound 71	Activity 71, Info 71
72	Pending	Compound 72	Activity 72, Info 72
73	Active	Compound 73	Activity 73, Info 73
74	Inactive	Compound 74	Activity 74, Info 74
75	Pending	Compound 75	Activity 75, Info 75
76	Active	Compound 76	Activity 76, Info 76
77	Inactive	Compound 77	Activity 77, Info 77
78	Pending	Compound 78	Activity 78, Info 78
79	Active	Compound 79	Activity 79, Info 79
80	Inactive	Compound 80	Activity 80, Info 80
81	Pending	Compound 81	Activity 81, Info 81
82	Active	Compound 82	Activity 82, Info 82
83	Inactive	Compound 83	Activity 83, Info 83
84	Pending	Compound 84	Activity 84, Info 84
85	Active	Compound 85	Activity 85, Info 85
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87	Pending	Compound 87	Activity 8

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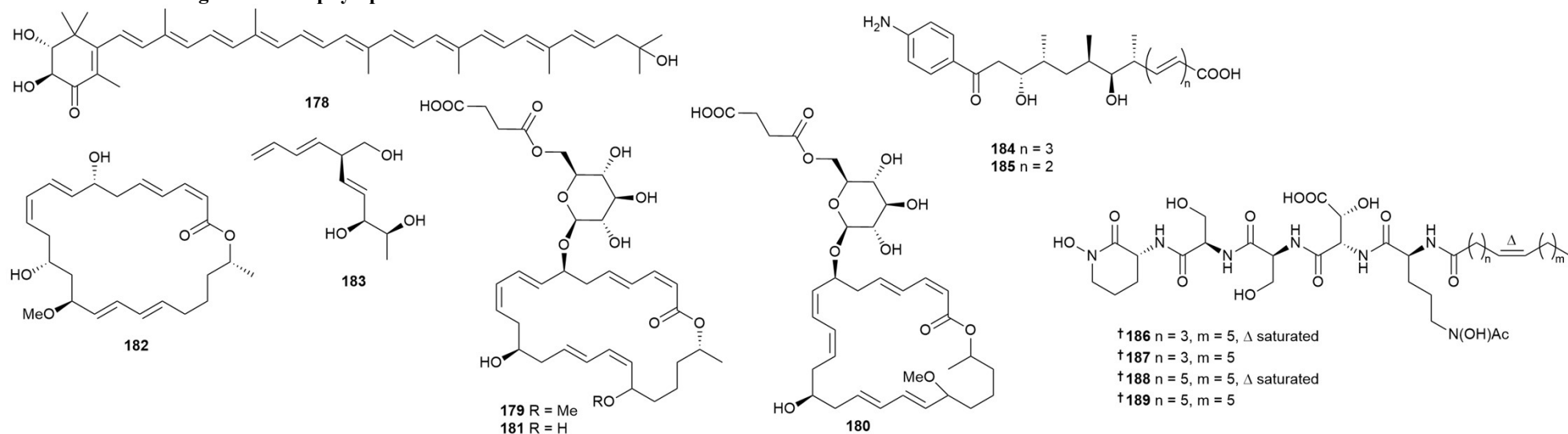


- 48** Actinobacteria *Streptomyces albidoflavus* // (tunicate, *Halocynthia papillosa*) Mediterranean Sea, Turkiye // Discovery of acyl-surugamide A2 from marine *Streptomyces albidoflavus* RKJM-0023—a new cyclic nonribosomal peptide containing an *N*-ε-acetyl-L-lysine residue
162 // N // acyl-surugamide A2 // NT.
- 49** Actinobacteria *Streptomyces* sp. // (sponge, *Dysidea avara*) Xisha Islands // Pyridapeptides F–I, cyclohexapeptides from marine sponge-derived *Streptomyces* sp. OUCMDZ-4539
165 // N // pyridapeptide F // IA vs 5 HTCLs.
166 // N // pyridapeptide G // weak activ. vs 5 HTCLs.
167 // N // pyridapeptide H // weak activ. vs 5 HTCLs.
168 // N // pyridapeptide I // IA to weak activ. vs 5 HTCLs.
- 50** Actinobacteria *Streptomyces olivaceus* // (sediment) South China Sea // The discovery of cyclic lipopeptide olenamidonins in a deepsea-derived *Streptomyces* strain by knocking out a DtxR family regulator
169 // N // olenamidonin A // IA to mod. activ. vs 5 bact. strains.
170 // N // olenamidonin B // IA to mod. activ. vs 5 bact. strains.
171 // N // olenamidonin C // IA to mod. activ. vs 5 bact. strains.
- 51** Actinobacteria *Streptomyces* sp. // (mangrove) Kosrae Island, Micronesia // A lucknolide derivative induces mitochondrial ROS-mediated G2/M arrest and apoptotic cell death in B16F10 mouse melanoma cells
172 // M // lucknolide A // IA vs 6 HTCLs.
- 52** Actinobacteria *Streptomyces griseorubens* // (sediment) Sehwa Beach, Jeju Island, Republic of Korea // Labdane-type diterpenoids from *Streptomyces griseorubens* and their antimicrobial and cytotoxic activities
173 // N // chlorolabdan A // IA vs 4 HTCLs; IA vs 3 bact. strains.
174 // N // chlorolabdan B // IA to mod. activ. vs 4 HTCLs; mod. activ. vs 3 bact. strains.
175 // N // chlorolabdan C // IA to weak activ. vs 3 bact. strains.
176 // N // epoxylabdan A // IA vs 4 HTCLs; IA vs 3 bact. strains.
177 // N // epoxylabdan B // IA vs 3 bact. strains.

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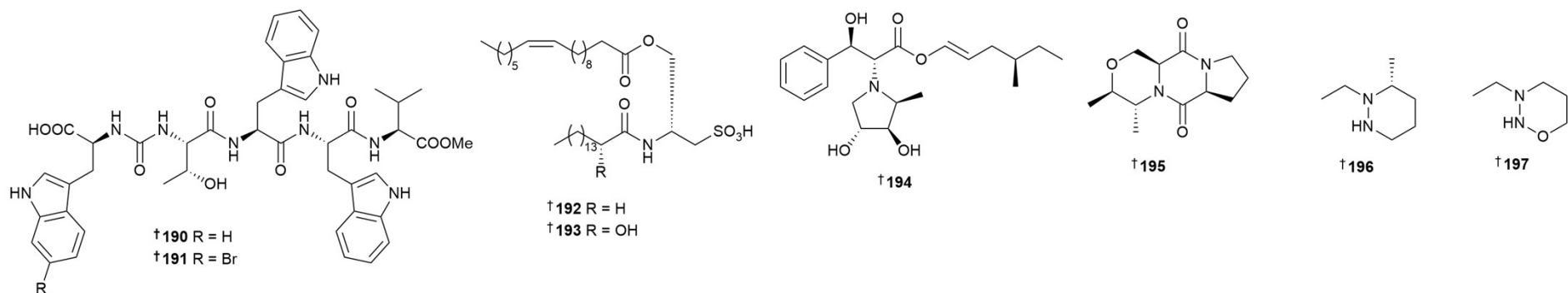


- 53** Bacteroidota *Algoriphagus* sp. // (alga) Senaga-Jima Island, Okinawa, Japan // Identification of a novel monocyclic carotenoid and prediction of its biosynthetic genes in *Algoriphagus* sp. oki45
178 // N // (2*R*,3*S*)-2-hydroxyflexixanthin // NT.
- 54** Firmicutes *Bacillus amyloliquefaciens* // (sediment) Arctic Ocean // New 24-membered macrolactones from an Arctic bacterium *Bacillus amyloliquefaciens* SCSIO 41392 and their anti-pathogenicity evaluation
179 // N // amylomacrolactine A // IA vs 1 bact. strain.
180 // N // amylomacrolactine B // IA vs 1 bact. strain.
181 // N // amylomacrolactine C // IA vs 1 bact. strain.
- 55** Firmicutes *Bacillus subtilis* // (sponge) South China Sea // Macrolactin XY, a macrolactin antibiotic from marine-derived *Bacillus subtilis* sp. 18
182 // N // macrolactin XY // IA to mod. activ. vs 6 bact. strains.
183 // N // (5*R*,9*S*,10*S*)-5-(hydroxymethyl)-1,3,7-decatriene-9,10-diol // IA to mod activ. vs 6 bact. strains.
- 56** Proteobacteria *Alcanivorax dieselolei* // (sediment) South China Sea // Two new mohangic acid derivatives from the deep-sea bacteria *Alcanivorax dieselolei* BC-5
184 // N // mohangic acid E // IA vs 2 HTCLs, IA vs anti-inflam.
185 // N // mohangic acid F // IA vs 2 HTCLs, IA vs anti-inflam.
- 57** Proteobacteria *Ectopseudomonas khazarica* // (snail eggs) Florida, USA // Bokeelamides: lipopeptides from bacteria associated with marine egg masses
186 // N // bokeelamide A // IA vs 2 bact. strains, IA vs 3 fungal strains.
187 // N // bokeelamide B // IA vs 2 bact. strains, IA vs 3 fungal strains.
188 // N // bokeelamide C // IA vs 2 bact. strains, IA vs 3 fungal strains.
189 // N // bokeelamide D // IA vs 2 bact. strains, IA vs 3 fungal strains.

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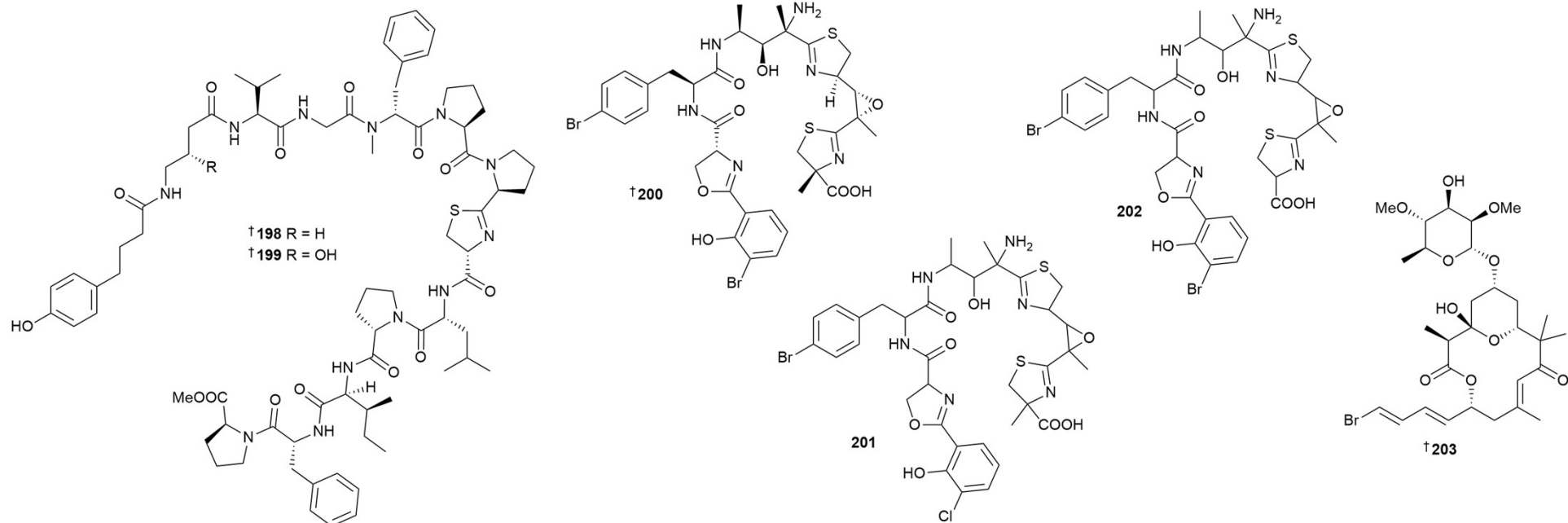
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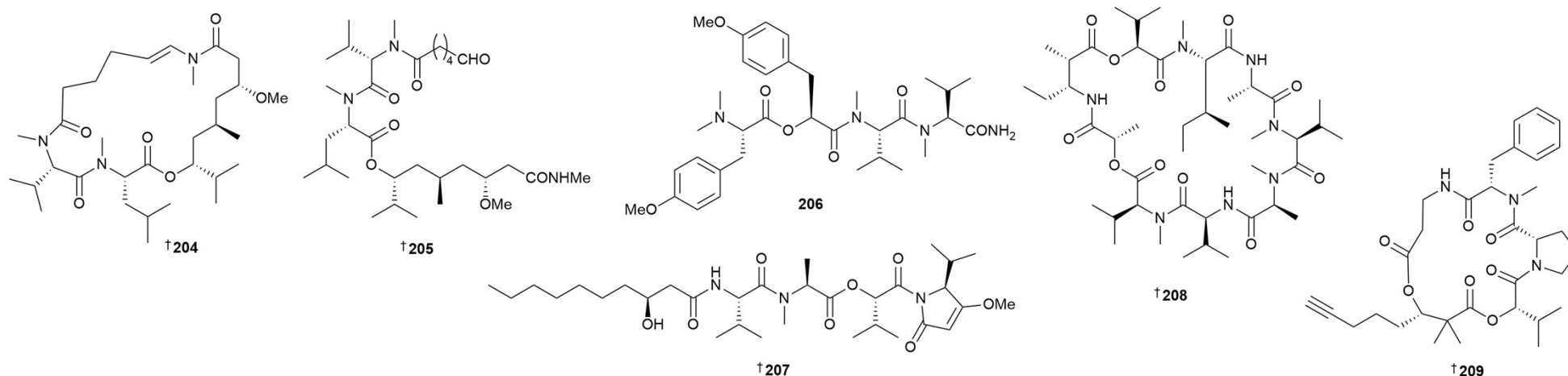
- 58** Proteobacteria *Pseudoalteromonas flavipulchra* // (arthropod) // Discovery of ureido-containing alteropeptilides and intramolecular cyclized alteramides in *Pseudoalteromonas flavipulchra* S16 by promoter engineering of cryptic biosynthetic gene clusters
190 // N // alteropeptilide A // IA vs bact. strains, IA vs anti-inflam.
191 // N // alteropeptilide B // IA vs bact. strains, IA vs anti-inflam.
- 59** Proteobacteria *Ruegeria pomeroyi*, *Ruegeria meonggei* // * // Structure revision of a widespread marine sulfonolipid class based on isolation and total synthesis
192 // N // cysteinolide A // IA vs 3 HTCLs, total synth. achieved.
193 // N // cysteinolide B // IA vs 3 HTCLs.
- 60** Proteobacteria *Vibrio ruber* // (seawater) Xindu Island, Haikou City, Hainan Province, China // Pyrrolidine, piperazine, and diazinane alkaloids from the marine bacterium strain *Vibrio ruber* ZXR-93
194 // N // vibripyrrolidine A // IA vs 3 HTCLs, IA to mod. activ. vs 4 bact. strains.
195 // N // vibriopiperazine A // IA vs 3 HTCLs, IA vs 4 bact. strains.
196 // N // vibridiazinane A // IA vs 3 HTCLs, IA to pot. activ. vs 4 bact. strains.
197 // N // vibridiazinane B // IA vs 3 HTCLs, IA to mod. activ. vs 4 bact. strains.

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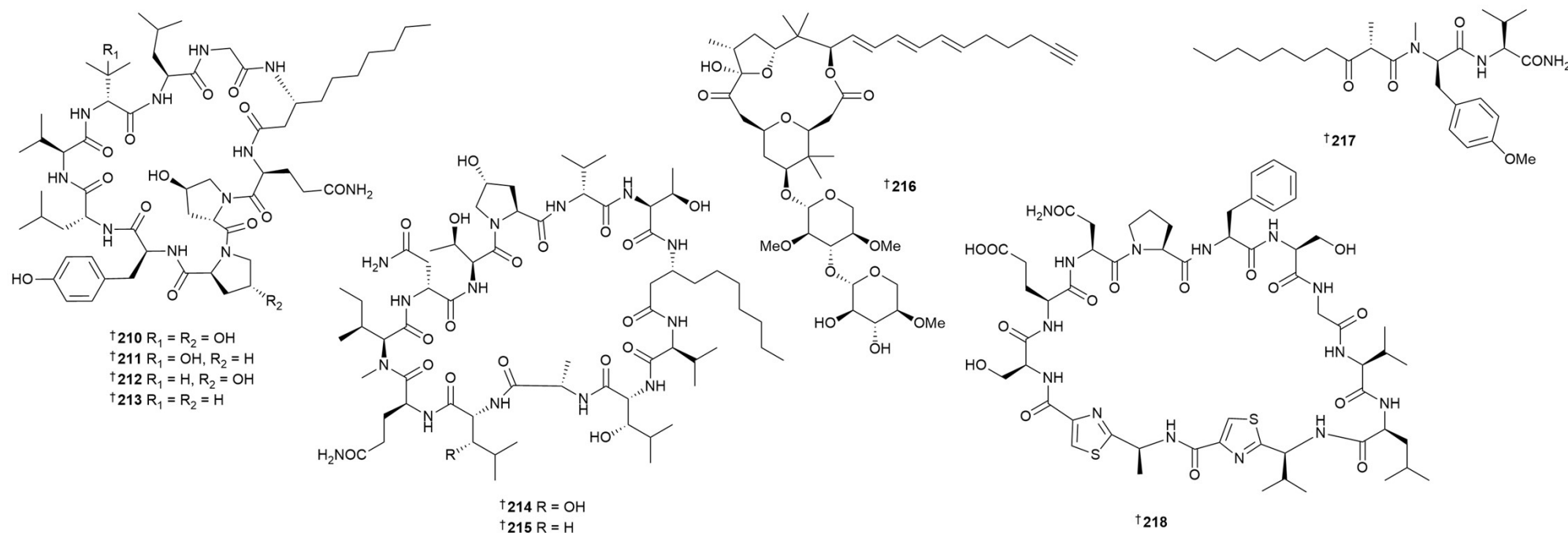
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- 100** Cyanobacteria *Hormosilla* sp. // Pemuchi Beach, Hateruma Island, Okinawa, Japan // Pemuchiamides A and B, proline-rich linear lipopeptides, isolated from a marine *Hormosilla* sp. cyanobacterium
198 // N // pemuchiamide A // weak activ. vs 2 HTCLs; mod. activ. vs *T. b. rhodesiense*.
199 // N // pemuchiamide B // weak activ. vs 2 HTCLs; weak activ. vs *T. b. rhodesiense*.
- 101** Cyanobacteria *Leptothoe* sp // Sulawesi, Indonesia; El Aruk, Egypt; Baia das Gatas, Republic of Cape Verde // Leptochelins A–C, cytotoxic metallophores produced by geographically dispersed *Leptothoe* strains of marine cyanobacteria
200 // N // leptochelin A // mod. activ. vs 5 HTCLs; IA vs 1 HT spheroid CL.
201 // N // leptochelin B // mod. activ. vs 1 HTCL; IA vs 1 HT spheroid CL.
202 // N // leptochelin C // mod. activ. vs 1 HTCL; IA vs 1 HT spheroid CL.
- 102** Cyanobacteria *Moorena* sp. // Shands Key, Florida, USA // Isolation and characterization of the cyanobacterial macrolide glycoside moorenaside, an anti-inflammatory analogue of aurisides targeting the Keap1/Nrf2 Pathway
203 // N // moorenaside // IA vs 1 HTCL; IA vs. anti-inflam.



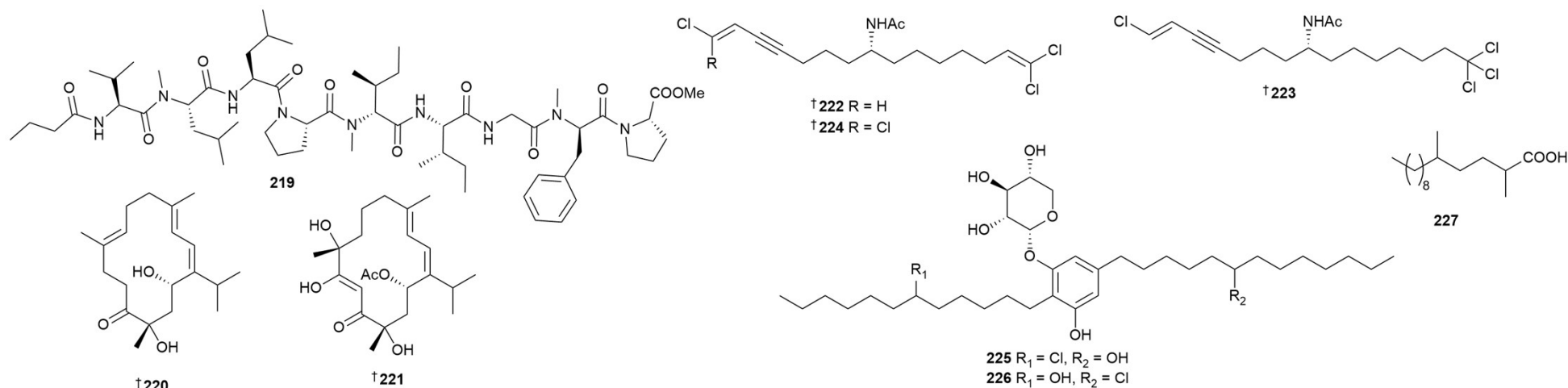
- 103** Cyanobacteria *Moorena* sp. // Tumon Bay, Guam // Isolation, structure elucidation, and biological activity of the selective TACR2 antagonist tumonolide and its aldehyde from a marine cyanobacterium
204 // N // tumonolide // IA vs 3 HTCLs; weak activ. vs TACR2 GPCR.
205 // N // tumonolide aldehyde // NT.
- 104** Cyanobacteria *Moorena producens* // Hector's Bay, Jamaica // Structure and biosynthesis of hectoramide B, a linear depsipeptide from marine cyanobacterium *Moorena producens* JHB discovered via coculture with *Candida albicans*
206 // N // hectoramide B // IA vs 2 fungal strains; IA vs 1 bact. strain.
- 105** Cyanobacteria *Moorena bouillonii* // Kavaratti, Lakshadweep Islands, India // The kavaratamides: discovery of linear lipodepsipeptides from the marine cyanobacterium *Moorena bouillonii* using a comparative chemogeographic analysis
207 // N // kavaratamide A // weak activ. vs 1 HTCL; IA vs *T. b. brucei*; IA vs *TbrCATL* and CRZ proteases.
- 106** Cyanobacteria *Moorena* sp. // Ie Island, Okinawa, Japan // Wajeepeptin, a cytotoxic and antitrypanosomal cyclic depsipeptide from a marine *Moorena* sp. cyanobacterium
208 // N // wajeepeptin // weak activ. vs 1 HTCL; mod. activ. vs *T. b. rhodesiense*; IA vs *P. falciparum*; XRD.
- 107** Cyanobacteria *Lyngbya* sp. // Buru, Indonesia // Isolation and total synthesis of PM170453, a new cyclic depsipeptide isolated from *Lyngbya* sp.
209 // N // PM170453 // IA to weak activ. vs 4 HTCLs; IA vs PD-1 protein; total synth. achieved.



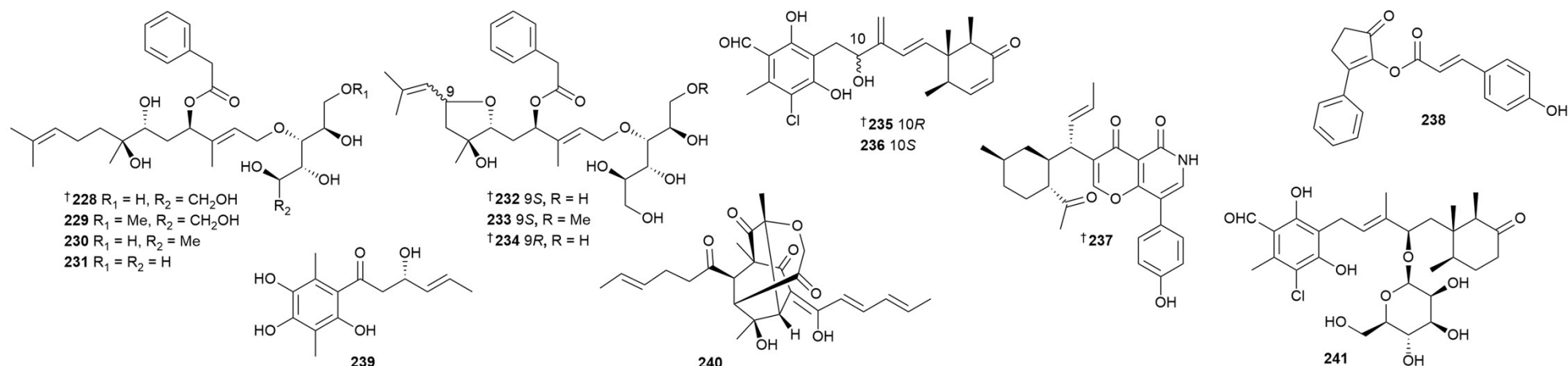
- 108** Cyanobacteria *Nodularia* sp. // Yatsu Tidal Flat, Narashino, Chiba, Japan // Noducyclamides A1–A4, B1, and B2 from the cyanobacterium *Nodularia* sp. NIES-3585
210 // N // noducyclamide A1 // IA vs 1 HTCL.
211 // N // noducyclamide A2 // weak activ. vs 1 HTCL.
212 // N // noducyclamide A3 // NT.
213 // N // noducyclamide A4 // NT.
214 // N // noducyclamide B1 // weak activ. vs 1 HTCL.
215 // N // noducyclamide B2 // NT.
- 109** Cyanobacteria *Okeania* sp. // Akuna beach, Yonashiromiyagi, Uruma city, Okinawa, Japan // Isolation and structure determination of a new analog of polycavernosides from marine *Okeania* sp. cyanobacterium
216 // N // polycavernoside E // IA vs 1 NHCL; weak activ vs. *T. b. rhodesiense*.
- 115** Cyanobacteria *Okeania hirsuta* // Kuba Beach, Nakagusuku, Okinawa, Japan // N-Desmethylmajusculamide B, a lipopeptide isolated from the Okinawan cyanobacterium *Okeania hirsuta*
217 // N // N-desmethylmajusculamide B // IA vs 1 MTCL.
- 116** Cyanobacteria *Okeania hirsuta* // Kuba Beach, Nakagusuku, Okinawa, Japan // Okeaniazole A: thiazole-containing cyclopeptide from the marine cyanobacterium *Okeania hirsuta* with antileishmanial activity
218 // N // okeaniazole A // IA vs 1 MTCL; IA vs *Leishmania major*; IA vs *N. amabilis*.

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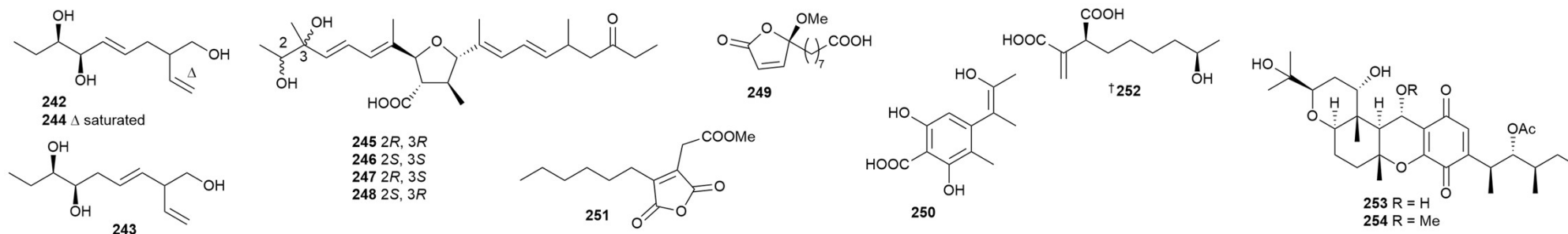


- 117 Cyanobacteria *Okeania* sp. // Tonaki Island, Japan // Amantamide C, an antitrypanosomal linear lipopeptide from a marine *Okeania* sp. cyanobacterium
 219 // N // amantamide C // IA vs 2 HTCLs; weak activ. vs *T. b. rhodesiense*.
- 118 Cyanobacteria *Okeania* sp. // Kagimmi beach, Okinawa, Japan // Kagimminols A and B, cembrene-type diterpenes from an *Okeania* sp. marine cyanobacterium
 220 // N // kagimminol A // IA vs 1 HTCL; mod. activ. vs *T. brucei rhodesiense*.
 221 // N // kagimminol B // IA vs 1 HTCL; mod. activ. vs *T. brucei rhodesiense*.
- 119 Cyanobacteria, unidentified // Piti Bomb Holes, Guam // Chlorinated enyne fatty acid amides from a marine cyanobacterium: discovery of taveuniamides L-M and pharmacological characterization of taveuniamide F as a GPCR antagonist with CNR1 selectivity
 222 // N // taveuniamide L // NT.
 223 // N // taveuniamide M // NT.
 224 // N // taveuniamide N // NT.
- 120 Cyanobacteria *Synechocystis salina* // LEGE-CC culture collection // Expanding the diversity of the cyanobacterial dialkylresorcinol bartoloside family
 225 // N // 29-dechloro-29-hydroxybartoloside A // NT.
 226 // N // 17-dechloro-17-hydroxybartoloside A // NT.
- 121 Cyanobacteria, unidentified // Jobos Bay Estuary, Puerto Rico, USA // Metabolomic analysis and antiviral screening of a marine algae library yield jobosic acid (2,5-dimethyltetradecanoic acid) as a selective inhibitor of SARS-CoV-2
 227 // M // jobosic acid // IA vs SARS CoV-2 spike-RBD/ACE2; IA vs SARS-CoV-2.



- 143** Ascomycota *Acremonium* sp. // (sponge, *Haliclona* sp.) Weizhou Island, Guangxi Province, China // Acremosides A–G, sugar alcohol-conjugated acyclic sesquiterpenes from a sponge-derived *Acremonium* species
 228 // N // acremoside A // mod. activ. vs 1 virus strain; IA vs 8 bact. strains.
 229 // N // acremoside B // weak activ. vs 1 virus; IA vs 8 bact. strains.
 230 // N // acremoside C // mod. activ. vs 1 virus strain; IA vs 8 bact. strains.
 231 // N // acremoside D // mod. activ. vs 1 virus strain; IA vs 8 bact. strains.
 232 // N // acremoside E // weak activ. vs 1 virus strain; IA vs 8 bact. strains.
 233 // N // acremoside F // weak activ. vs 1 virus strain; IA vs 8 bact. strains.
 234 // N // acremoside G // weak activ. vs 1 virus strain; IA vs 8 bact. strains.
- 144** Ascomycota *Acremonium dichromosporum* // (seawater) Yap Trench // Anti-inflammatory and proangiogenic metabolites from the hadal trench-derived fungus *Acremonium dichromosporum* YP-213
 235 // N // acremocholrin A // IA vs anti-inflam.
 236 // N // acremocholrin B // IA vs anti-inflam.
 237 // N // acremopyridone A // IA vs anti-inflam.
 238 // N // acremoketene A // IA vs anti-inflam.
- 145** Ascomycota *Acremonium* sp // (sediment) South China Sea // Chemical constituents of the marine-derived fungus *Acremonium* sp. AN-13
 239 // N // 3(*S*)-hydroxy-1-(2,4,5-trihydroxy-3,6- dimethylphenyl)-hex-4*E*-en-1-one // IA vs 4 bact. strains; IA vs antioxidant.
 240 // N // acremonilactone // IA vs 4 bact. strains; IA vs antioxidant.

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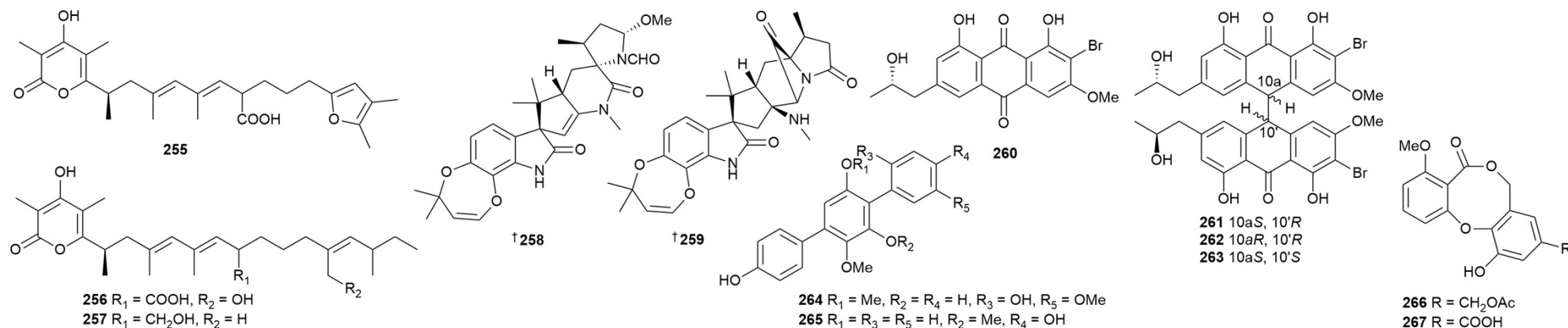


- 146** Ascomycota *Acremonium* sp // (brittle star, *Gymnolophus obscura*) Xisha Islands, China // A new ascochlorin glycoside from brittlestar-derived fungus *Acremonium* sp. and its biological activities
241 // N // 3-chloro-4,6-dihydroxy-2-methyl-5-((*R,E*)-3-methyl-4-(((2*R*,3*S*,4*S*,5*S*,6*R*)-3,4,5-trihydroxy-6-(hydroxymethyl)tetrahydro-2*H*-pyran-2-yl)oxy)-5-((1*S*,2*R*,6*R*)-1,2,6-trimethyl-3-oxocyclohexyl)pent-2-en-1-yl)benzaldehyde // IA vs 3 HTCLs; IA vs 6 bact. strains; IA vs α -glucosidase.
- 147** Ascomycota *Albifimbria verrucaria* // National Marine Biodiversity Institute of Korea // Three new nonenes from culture broth of marine-derived fungus *Albifimbria verrucaria* and their cytotoxic and anti-viral activities
242 // N // verrucanonene A // IA vs 4 HTCLs.
243 // N // verrucanonene B // IA vs 4 HTCLs.
244 // N // verrucanonene C // IA vs 4 HTCLs.
- 148** Ascomycota *Albifimbria verrucaria* // (mussel, *Mytilus edulis*) Changdao Island, Yantai, China. // Albifimbrins A and B, a pair of epimeric tetrahydrofuran-containing linear polyketide derivatives from the marine-derived fungus *Albifimbria verrucaria* CD1-4
245 // N // (2*R*,3*R*)-albifimbrin A // IA to weak activ. vs 5 phytoplankton.
246 // N // (2*S*,3*S*)-albifimbrin A // IA to weak activ. vs 5 phytoplankton.
247 // N // (2*R*,3*S*)-albifimbrin B // IA to weak activ. vs 5 phytoplankton.
248 // N // (2*S*,3*R*)-albifimbrin B // IA to weak activ. vs 5 phytoplankton.
- 149** Ascomycota *Alternaria alternata* // (unspecified sponge) Yantai, Shandong Province, China // Alterbutenolide, a new butenolide derivative from a sponge-derived fungus *Alternaria alternata* I-YLW6-1
249 // N // alterbutenolide // IA vs 3 phytoplankton; IA vs 1 zooplankton.
- 150** Ascomycota *Arthriniium arundinis* // (sea anemone, *Palythoa* sp.) Badouzi, Keelung, Taiwan // Anti-inflammatory constituents from a sea anemone-derived fungus *Arthriniium arundinis* MA30
250 // N // arthrinoic acid // IA vs NO prod.
251 // N // hexylaconitic anhydride methyl ester // IA vs NO prod.
252 // N // (3*S*,8*R*)-8-hydroxy-3-carboxy-2-methylenonanoic acid // IA vs NO prod.
253 // N // arthripenoid G // weak inhib. NO prod.
254 // N // arthripenoid H // weak inhib. NO prod.

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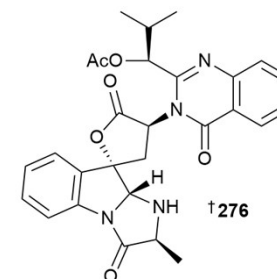
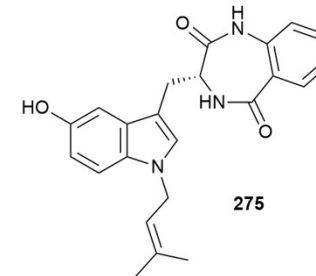
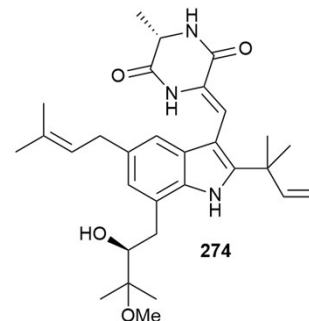
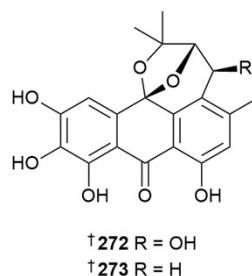
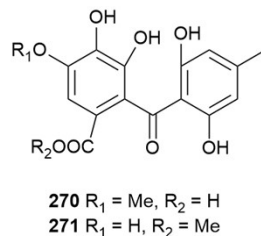
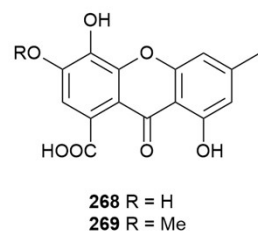


- 151** Ascomycota *Arthrinium arundinis*, Ascomycota *Apiospora arundinis* // (sponge, *Phakellia fusca* Thiele) Xisha Islands // Anti-inflammatory and neuroprotective α -pyrones from a marine-derived strain of the fungus *Arthrinium arundinis* and their heterologous expression
255 // N // alternapyrone G // IA vs NO prod.; weak anti-Alzheimer's activ.
256 // N // alternapyrone H // IA vs NO prod.
257 // N // alternapyrone I // IA vs NO prod.
- 152** Ascomycota *Aspergillus aculeatinus*, Ascomycota *Penicillium* sp. // (sediment) South China Sea // Aculeaquamides B and C, two new paraherquamides from the co-culture of *Aspergillus aculeatinus* WHUF0198 and *Penicillium* sp. DM27
258 // N // aculeaquamide B // IA vs insecticidal activ.
259 // N // aculeaquamide C // IA vs insecticidal activ.
- 153** Ascomycota *Aspergillus alliaceus* // unspecified alga // Chemical diversity of *Aspergillus alliaceus* phenotypes: discovery of brominated bianthrone with activity against triple-negative breast cancer cell lines
260 // N // bromo-nalgiolaxin // NT vs 5 HTCLs; IA vs 2 bact. strains; IA vs 1 fungus.
261 // N // allianthrone D // IA to weak cytotox. vs 5 HTCLs; IA vs 2 bact. strains; IA vs 1 fungus.
262 // N // allianthrone E // IA to weak cytotox. vs 5 HTCLs; IA vs 2 bact. strains; IA vs 1 fungus.
263 // N // allianthrone F // weak cytotox. vs 5 HTCLs; IA vs 2 bact. strains; IA vs 1 fungus.
- 154** Ascomycota *Aspergillus candidus* // (unspecified sponge) Lingao County, Hainan Province, China // *p*-Terphenyl and diphenyl ether derivatives from the marine-derived fungus *Aspergillus candidus* HM5-4
264 // N // asperterphenylcin A // IA vs 5 HTCLs; IA vs α -glucosidase.
265 // N // asperterphenylcin B // IA vs 5 HTCLs; weak inhib. α -glucosidase.
266 // N // asperdiphenylcin A // IA vs 5 HTCLs; IA vs α -glucosidase.
267 // N // asperdiphenylcin B // IA vs 5 HTCLs; IA vs α -glucosidase.

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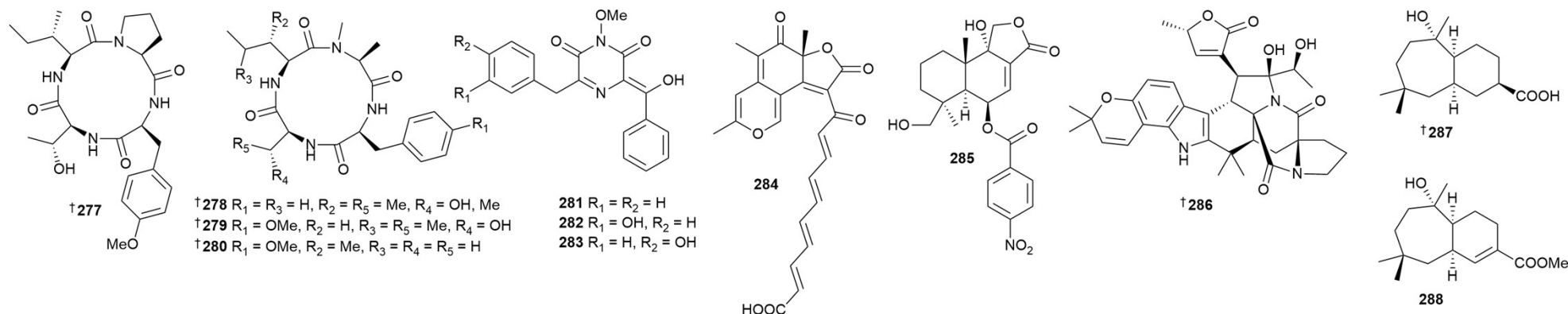
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- 155** Ascomycota *Aspergillus carneus* // (unspecified sponge) Weizhou Islands, Beibu Gulf, China // Carneusones A-F, benzophenone derivatives from sponge-derived fungus *Aspergillus carneus* GXIMD00543
268 // N // carneusone A // IA vs NO prod.
269 // N // carneusone B // IA vs NO prod.
270 // N // carneusone C // IA vs NO prod.
271 // N // carneusone D // IA vs NO prod.
272 // N // carneusone E // IA vs NO prod.
273 // N // carneusone F // IA vs NO prod.
- 156** Ascomycota *Aspergillus chevalieri* // (sediment) Lighthouse of Dahab, Egypt // Indole diketopiperazine alkaloids from the marine sediment-derived fungus *Aspergillus chevalieri* against pancreatic ductal adenocarcinoma
274 // N // rubrumline P // IA vs 1 HTCL.
- 157** Ascomycota *Aspergillus fischeri* // (sponge, *Hyrtios erecta*) Rok Nai Island, Krabi Province, Thailand // Hydroxytakakiamide and other constituents from a marine sponge-associated fungus *Aspergillus fischeri* MMERU23, and antinociceptive activity of ergosterol acetate, acetylaszonalenin and helvolic acid
275 // N // hydroxytakakiamide // NT
- 158** Ascomycota *Aspergillus clavatus*, Ascomycota *Neosartorya clavata* // (unspecified ascidian) Lombok Island, Indonesia // Absolute configuration of 12S-deoxynortryptoquivaline from ascidian-derived fungus *Aspergillus clavatus* determined by anisotropic NMR and chiroptical spectroscopy
276 // N // 12S-deoxynortryptoquivaline // NT

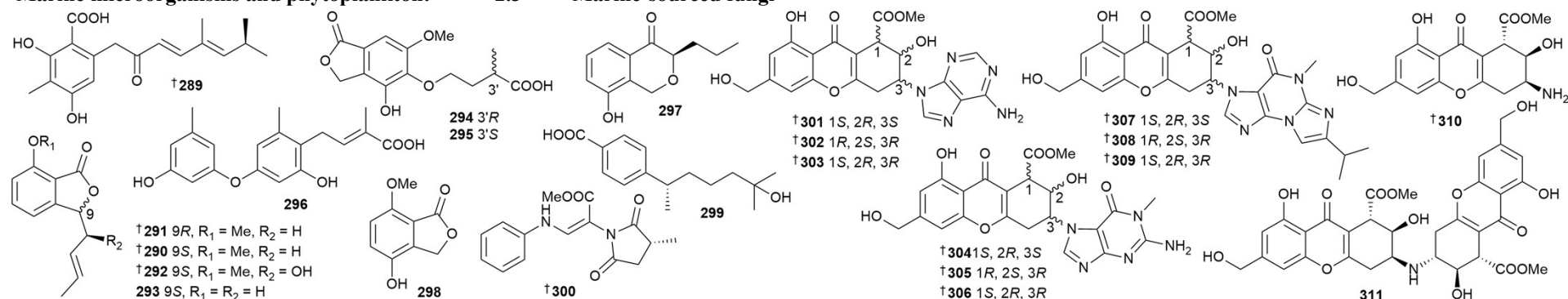
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- 159** Ascomycota *Aspergillus insulicola*, Ascomycota *Alternaria angustioidea* // (unidentified sponge) Weizhou Island, China // Antimicrobial and anti-inflammatory cyclic tetrapeptides from the co-cultures of two marine-derived fungi
 277 // N // violaceotide B // IA vs 8 bact. strains; IA vs 1 fungus; IA vs anti-inflam.
 278 // N // violaceotide C // IA vs 8 bact. strains; IA vs 1 fungus; IA vs anti-inflam.
 279 // N // violaceotide D // IA vs 8 bact. strains; IA vs 1 fungus; IA vs anti-inflam.
 280 // N // violaceotide E // IA vs 8 bact. strains; IA vs 1 fungus; IA vs anti-inflam.
- 160** Ascomycota *Aspergillus noonimiae* // (sediment) Perth, Western Australia // Miniaturized cultivation profiling (MATRIX)-facilitated discovery of noonazines A–C and noonaphilone A from an Australian marine-derived fungus, *Aspergillus noonimiae* CMB-M0339
 281 // N // noonazine A // IA vs 2 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
 282 // N // noonazine B // IA vs 2 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
 283 // N // noonazine C // IA vs 2 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
 284 // N // noonaphilone A // IA vs 2 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
- 161** Ascomycota *Aspergillus ochraceopetaliformis* // (sponge, *Tedania* sp.) Penghu, Taiwan // Identification of a marine-derived sesquiterpenoid, compound-8, that inhibits tumour necrosis factor-induced cell death by blocking complex II assembly
 285 // N // 9 α ,14-dihydroxy-6 β -p-nitrobenzoylcinnamamide // weak inhib. TNF receptor superfamily
- 162** Ascomycota *Aspergillus ochraceus* // (seawater) Northeastern Pacific // Stephaochratin A, a rare stephacidin-asperochratide hybrid with ferroptosis inhibitory activity from the deep-sea-derived *Aspergillus ochraceus*
 286 // N // stephaochratin A // IA vs antioxid.; IA vs iron chelation; IA vs ferroptosis inhib. in 3 HTCLs.
- 163** Ascomycota *Aspergillus puniceus* // (sediment) Pacific Ocean // Malfilanol C, a new sesquiterpenoid isolated from the deep-sea-derived *Aspergillus puniceus* A2 fungus
 287 // N // malfilanol C // IA vs 2 bact. strains.
 288 // M // malfilanol B // IA vs 2 bact. strains.

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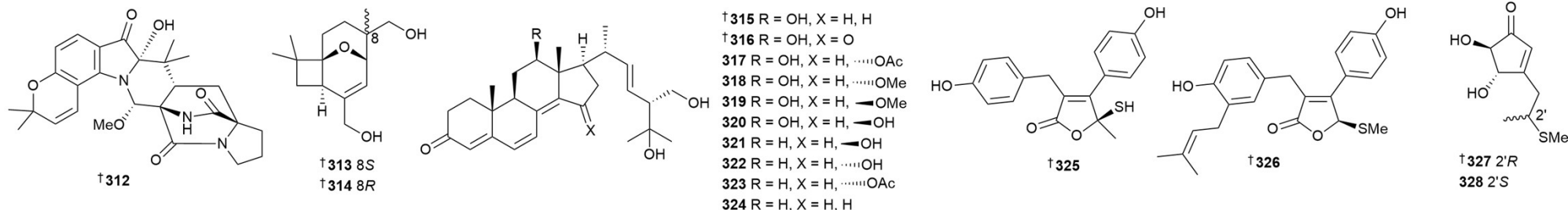


- 164** Ascomycota *Aspergillus subversicolor* // (sediment) Haima, China // New phenol derivatives from the Haima cold seep-derived fungus *Aspergillus subversicolor* CYH-17
289 // N // subversin A // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
290 // N // (-)-subversin B // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
291 // N // (+)-subversin B // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
292 // N // subversin C // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
293 // N // subversin D // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
294 // N // (-)-subversin E // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
295 // N // (+)-subversin E // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
296 // N // subversic acid A // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
297 // N // epi-wortmannine G // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
298 // N // 4-hydroxy-7-methoxyphthalide // IA vs 8 bact. strains; IA vs AChE; IA vs α -glucosidas; IA vs antioxid.
165 Ascomycota *Aspergillus sydowii*, Ascomycota *Emericella sydowii* // (sediment) Western Pacific // New bisabolane-type sesquiterpenoid from *Aspergillus sydowii* BTBU20213012
299 // N // (+)-8-dehydroxylaustrosene // IA vs 2 bact. strains; IA vs 1 fungus.
166 Ascomycota *Aspergillus sydowii*, Ascomycota *Emericella sydowii* // (sediment) Dalian, Liaoning Province, China // Chemical epigenetic regulation secondary metabolites derived from *Aspergillus sydowii* DL1045 with inhibitory activities for protein tyrosine phosphatases
300 // N // sydowimide A // IA to weak inhib. vs 4 PTPs.
167 Ascomycota *Aspergillus sydowii* // (sponge, *Xestospongia exigua*) Weizhou Island, China // Nucleobase-coupled xanthenes with anti-ROS effects from marine-derived fungus *Aspergillus sydowii*
301 // N // (+)-sydoxanthone F // weak vs antioxid.
302 // N // (-)-sydoxanthone F // weak vs antioxid.
303 // N // sydoxanthone G // weak vs antioxid.
304 // N // (+)-sydoxanthone H // weak vs antioxid.
305 // N // (-)-sydoxanthone H // weak vs antioxid.
306 // N // sydoxanthone I // weak vs antioxid.
307 // N // (+)-sydoxanthone J // IA vs antioxid.
308 // N // (-)-sydoxanthone J // IA vs antioxid.
309 // N // sydoxanthone K // IA vs antioxid.
310 // N // sydoxanthone L // IA vs antioxid.
311 // N // sydoxanthone M // IA vs antioxid.

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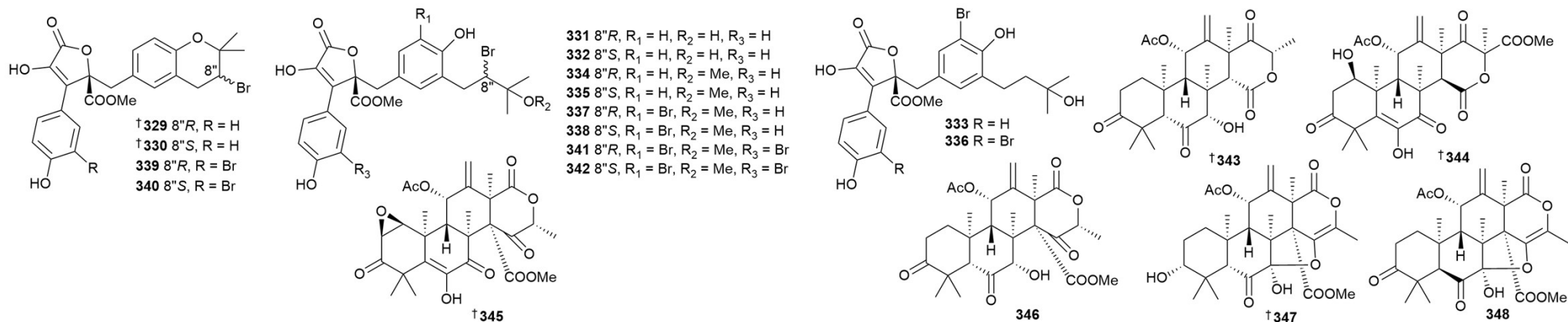
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- 168** Ascomycota *Aspergillus taichungensis* // (red alga, *Gelidium amansii*) Yantai, China // Aspertaichamide a, a novel cytotoxic prenylated indole alkaloid possessing a bicyclo[2.2.2]diazaoctane framework from a marine algal-derived endophytic fungus *aspergillus taichungensis* 299
312 // N // aspertaichamide A // IA to weak cytotox. vs 5 HTCLs.
- 169** Ascomycota *Aspergillus terreus* // (sediment) South China Sea // Discovery of antibacterial compounds against *Xanthomonas citri* subsp. *citri* from a marine fungus *Aspergillus terreus* SCSIO 41202 and the mode of action
313 // N // asperporonin A // IA vs 1 bact. strain.
314 // N // asperporonin B // IA vs 1 bact. strain.
- 170** Ascomycota *Aspergillus terreus* // (seawater) Yap Trench, West Pacific Ocean // Ergone derivatives from the deep-sea-derived fungus *Aspergillus terreus* YPGA10 and 25,28-dihydroxyergone-induced apoptosis in human colon cancer SW620 cells
315 // N // (9R,10R,12R,13R,17R,20R,24R)-12β,25,28-trihydroxyergone // IA to weak cytotox. vs 11 HTCLs.
316 // N // (9R,10R,12R,13R,17R,20R,24R)-15-oxo-12β,25,28-trihydroxy-ergone // IA vs 6 HTCLs.
317 // N // (9R,10R,12R,13R,15S,17R,20R,24R)-15α-acetoxy-12β,25,28-trihydroxyergone // IA vs 6 HTCLs.
318 // N // (9R,10R,12R,13R,15S,17R,20R,24R)-15α-methoxy-12β,25,28-trihydroxyergone // IA vs 6 HTCLs.
319 // N // (9R,10R,12R,13R,15R,17R,20R,24R)-15β-methoxy-12β,25,28-trihydroxyergone // IA vs 6 HTCLs.
320 // N // (9R,10R,12R,13R,15R,17R,20R,24R)-12β,15β,25,28-tetrahydroxyergone // NT.
321 // N // (9R,10R,13R,15R,17R,20R,24R)-15β,25,28-trihydroxyergone // NT.
322 // N // (9R,10R,13R,15R,17R,20R,24R)-15α,25,28-trihydroxyergone // NT.
323 // N // (9R,10R,12R,13R,15S,17R,20R,24S)-15α-acetoxy-12β,25,26-trihydroxyergone // IA vs 6 HTCLs.
324 // N // (9R,10R,13R,17R,20R,24S)-25,26-dihydroxyergone // IA vs 6 HTCLs.
- 171** Ascomycota *Aspergillus terreus* // (unspecified coral) Xisha Islands, China // Four sulfur-containing compounds with anti-colon cancer effect from marine-derived fungus *Aspergillus terreus*
325 // N // asperteretal L // IA vs 2 HTCLs.
326 // N // asperteretal M // IA vs 2 HTCLs.
327 // N // terrein A // IA vs 2 HTCLs.
328 // N // terrein A // IA vs 2 HTCLs.

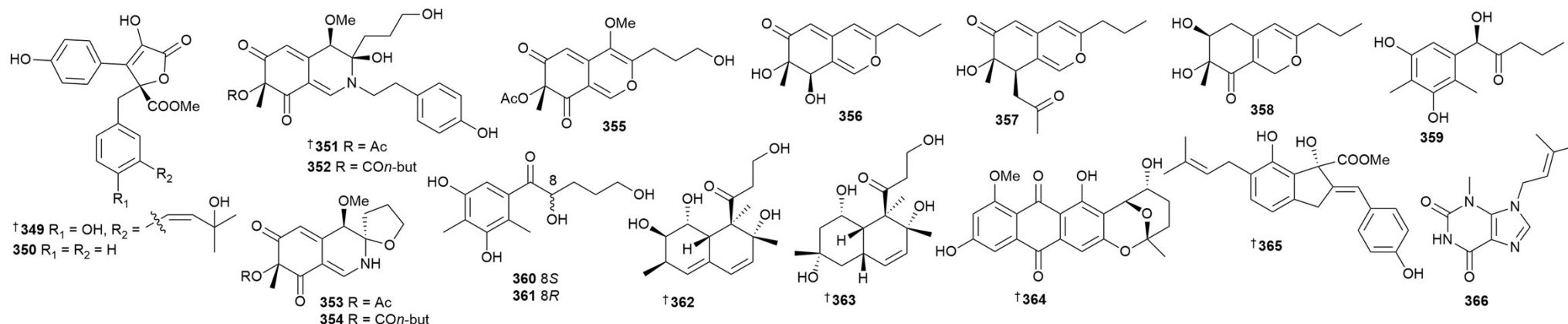
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- 172** Ascomycota *Aspergillus terreus* // (soft coral, *Sinularia scabra*) South China Sea // Exploring brominated aromatic butenolides from *Aspergillus terreus* EGF7-0-1 with their antifungal activities
- 329 // N // terreroide A // weak to pot. activ. vs 5 fungal strains.
 330 // N // 8''-epi-terreroide A // weak to pot. activ. vs 5 fungal strains.
 331 // N // terreroide B // IA to mod. activ. vs 5 fungal strains.
 332 // N // 8''-epi-terreroide B // IA to mod. activ. vs 5 fungal strains.
 333 // N // terreroide C // IA to mod. activ. vs 5 fungal strains.
 334 // N // terreroide D // weak to mod. activ. vs 5 fungal strains.
 335 // N // 8''-epi-terreroide D // weak to mod. activ. vs 5 fungal strains.
 336 // N // terreroide E // IA to pot. activ. vs 5 fungal strains.
 337 // N // terreroide F // weak activ. vs 5 fungal strains.
 338 // N // 8''-epi-terreroide F // IA to mod. activ. vs 5 fungal strains.
 339 // N // terreroide G // mod. to pot. activ. vs 5 fungal strains.
 340 // N // 8''-epi-terreroide G // weak to pot. activ. vs 5 fungal strains.
 341 // N // terreroide H // weak to mod. activ. vs 5 fungal strains.
 342 // N // 8''-epi-terreroide H //
- 173** Ascomycota *Aspergillus terreus* // (gastropod mollusc, *Onchidium struma*) Guangdong province, Zhanjiang, Xuwen, China // Meroterpenoids from the marine-derived fungus *Aspergillus terreus* GZU-31-1 exerts anti-liver fibrosis effects by targeting the Nrf2 signaling in vitro
- 343 // N // aspertermeroterpene A // IA vs antifibrotic activ.
 344 // N // aspertermeroterpene B // IA vs antifibrotic activ.
 345 // N // aspertermeroterpene C // IA vs antifibrotic activ.
 346 // N // aspertermeroterpene D // IA vs antifibrotic activ.
 347 // N // aspertermeroterpene E // IA vs antifibrotic activ.
 348 // N // aspertermeroterpene F // IA vs antifibrotic activ.

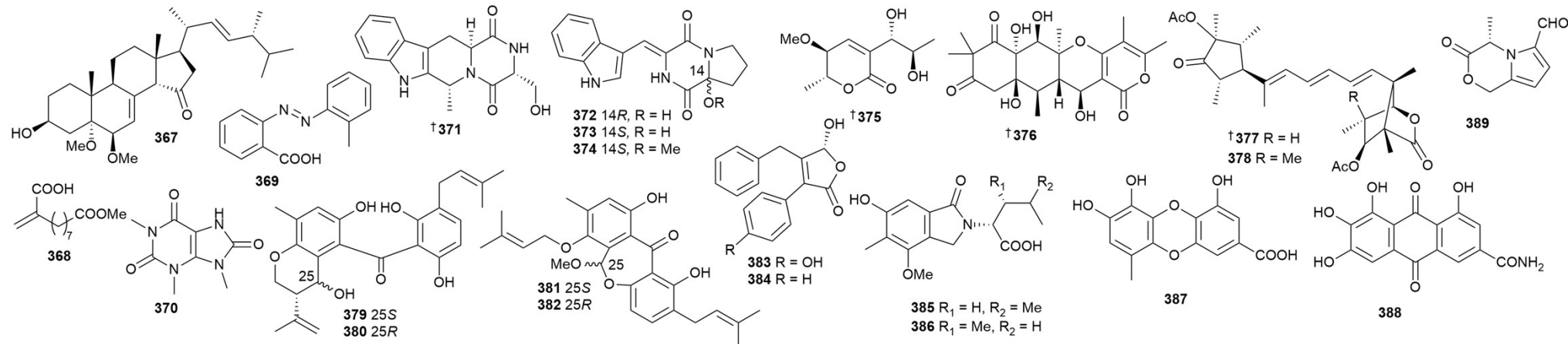
2 Marine microorganisms and phytoplankton: 2.3 Marine-sourced fungi



- 174** Ascomycota *Aspergillus terreus* // (gastropod mollusc, *Onchidium struma*) Xuwen, Guangdong province, China // New butanolide derivatives from the marine derived fungus *Aspergillus terreus* GZU-31-1 by chemical epigenetic manipulation
349 // N // asperbutyrolactone A // IA vs NO prod.
350 // N // asperbutyrolactone B // IA vs NO prod.
- 175** Ascomycota *Aspergillus terreus* // (sea hare, *Aplysia pulmonica*) Weizhou coral reefs, South China Sea // Pleiotropically activation of azaphilone biosynthesis by overexpressing a pathway-specific transcription factor in marine-derived *Aspergillus terreus* RA2905
351 // N // azasperone C // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
352 // N // azasperone D // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
353 // N // azasperone E // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
354 // N // azasperone F // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
355 // N // azasperone G // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
356 // N // azasperone H // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
357 // N // azasperone I // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
358 // N // azasperone J // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
359 // N // preazasperone A // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
360 // N // preazasperone B // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
361 // N // preazasperone C // IA vs 20 HTCLs; IA vs 10 bact. strains; IA vs NO prod.; IA vs antioxid.
- 176** Ascomycota *Aspergillus versicolor*, Ascomycota *Emericella versicolor* // (unspecified soft coral) South China Sea // Two new types of structures from soft coral-associated epiphytic fungus *Aspergillus versicolor* CGF9-1-2
362 // N // decumbenone E // IA vs tyrosyl DNA phosphodiesterase 1.
363 // N // decumbenone F // IA vs tyrosyl DNA phosphodiesterase 1.
364 // N // 2'-epi-8-O-methylindurufin // IA vs tyrosyl DNA phosphodiesterase 1.
365 // N // (-)-phomoidene A // IA vs tyrosyl DNA phosphodiesterase 1.
366 // N // 3-methyl-9-(2-methylbutene)-xanthine // IA vs tyrosyl DNA phosphodiesterase 1.

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- 177** Ascomycota *Aspergillus* sp. // (sponge, *Coelocarteria* sp.) Hainan province, China // Antibacterial oxygenated ergostane-type steroids produced by the marine sponge-derived fungus *Aspergillus* sp.
367 // N // 3 β -hydroxy-5 α ,6 β -methoxyergosta-7,22-dien-15-one // IA vs 6 bact. strains.
- 178** Ascomycota *Aspergillus* sp. // (unidentified sponge) Phan Rang bay, Ninh Thuan, Vietnam // Cytotoxic and antimicrobial metabolites from the marine-derived fungus *Aspergillus* sp. OPR23-FS01
368 // N // 10-methoxy-2-methylene-10-oxodecanoic acid // IA vs 2 HTCLs; IA vs 6 bact. strains; IA vs 1 fungus.
369 // N // 2-carboxy-2'-methyl-azobenzene // IA vs 2 HTCLs; IA to weak activ. vs 6 bact. strains; IA vs 1 fungus.
370 // N // 1,3,9-trimethyluric acid // IA vs 2 HTCLs; IA to weak activ. vs 6 bact. strains; IA vs 1 fungus.
- 179** Ascomycota *Aspergillus* sp. // (sediment) Indian Ocean // New cyclic dipeptide discovered from deep-sea derived *Aspergillus* sp. HDN20-1401
371 // N // aspergilalkaloid A // IA vs 2 HTCLs; IA to weak activ. vs 5 bact. strains; IA vs 1 fungus.
- 180** Ascomycota *Aspergillus* sp. // (sediment) Mariana Trench // Isolation and structure elucidation of new metabolites from the Mariana-Trench-associated fungus *Aspergillus* sp. SY2601
372 // N // asperindopiperazine A // IA vs 2 bact. strains; IA vs 1 fungus.
373 // N // asperindopiperazine B // IA vs 2 bact. strains; IA vs 1 fungus.
374 // N // asperindopiperazine C // IA vs 2 bact. strains; IA vs 1 fungus.
375 // N // 5-methoxy-8,9-dihydroxy-8,9-deoxyaspyrone // IA vs 2 bact. strains; IA vs 1 fungus.
376 // N // 12S-aspartetranone D // weak to mod. activ. vs 2 bact. strains; IA vs 1 fungus.
- 181** Ascomycota *Aspergillus* sp. // (sediment) Putuo District, Zhoushan, China // Antimicrobial metabolites from the marine-derived fungus *Aspergillus* sp. ZZ1861
377 // N // emericalactone F // IA vs 2 bact. strains; IA vs 1 fungus.
378 // N // emericalactone G // IA vs 2 bact. strains; IA vs 1 fungus.
379 // N // 20R,25S-preshamixanthone // IA to weak activ. vs 2 bact. strains; IA vs 1 fungus.
380 // N // 20R,25R-preshamixanthone // IA to weak activ. vs 2 bact. strains; weak activ. vs 1 fungus.
381 // M // 25S-O-methylarugosin A // IA vs 2 bact. strains; IA vs 1 fungus.
382 // M // 25R-O-methylarugosin A // IA vs 2 bact. strains; weak activ. vs 1 fungus.
383 // M // 5R-(+)-9-hydroxymicroperfuranone // IA vs 2 bact. strains; IA vs 1 fungus.
384 // M // 5R-(+)-microperfuranone // IA to weak activ. vs 2 bact. strains; weak activ. vs 1 fungus.
385 // N // phthalimidinic acid A // IA vs 2 bact. strains; mod. activ. vs 1 fungus.

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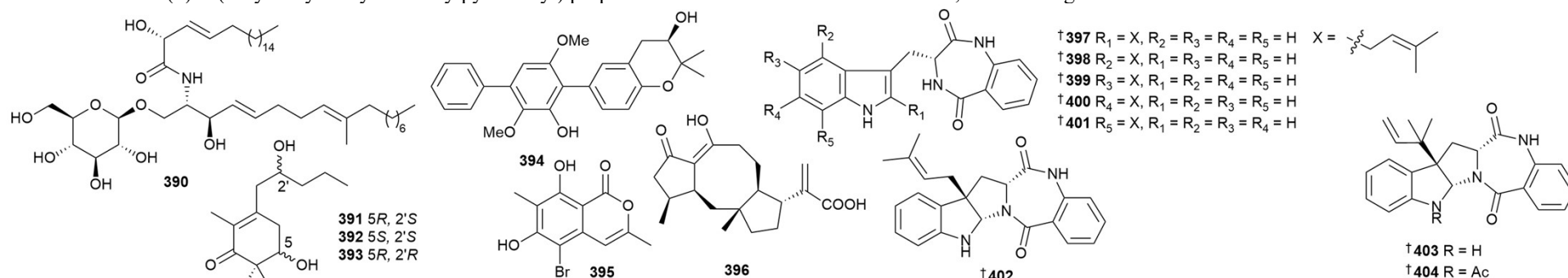
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386 // N // phthalimidinic acid B // IA vs 2 bact. strains; mod. activ. vs 1 fungus.

387 // N // aspergilol G // IA vs 2 bact. strains; mod. activ. vs 1 fungus.

388 // N // 2-hydroxyemodicamide // IA vs 2 bact. strains; weak activ. vs 1 fungus.

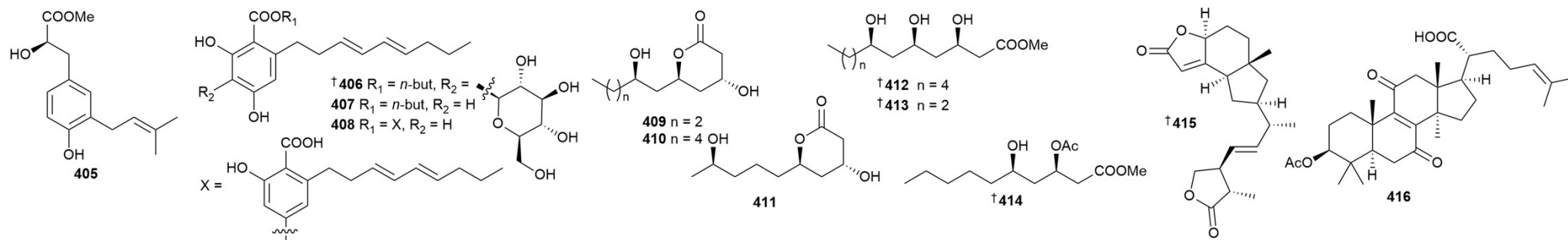
389 // M // (S)-2-(5-hydroxymethyl-2-formylpyrrol-1-yl) propionic acid lactone // IA vs 2 bact. strains; IA vs 1 fungus.



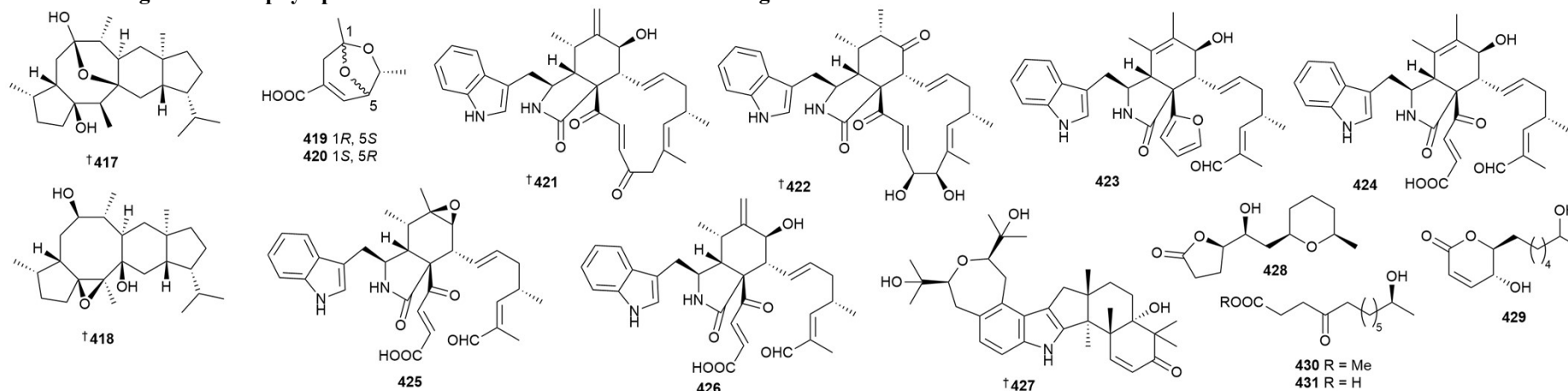
- 182** Ascomycota *Aspergillus* sp. // (seawater) Xiongdian Island, Fujian Province, China // Optimization of fermentation process for new anti-inflammatory glycosylceramide metabolite from *Aspergillus* sp.
- 390** // N // aspercerebroside A // IA vs anti-inflam.
- 183** Ascomycota *Aspergillus* sp. // (unspecified coral) Hainan, China // Secondary metabolites with agricultural antagonistic potential from *Aspergillus* sp. ITBBc1, a coral-associated marine fungus
- 391** // N // megastigmanone A // IA vs inhib. germination 3 plants.
- 392** // N // megastigmanone B // IA vs inhib. germination 3 plants.
- 393** // N // megastigmanone C // IA vs inhib. germination 3 plants.
- 394** // N // prenilylterphenyllin H // IA vs inhib. germination 3 plants.
- 184** Ascomycota *Aspergillus* sp. // (unspecified starfish) Shishen seamount, Northwest sub-basin, South China Sea // A new brominated isocoumarin from the marine starfish-associated fungus *Aspergillus* sp. WXF1904
- 395** // N // similanpyrone C // IA vs AChE; IA vs PL.
- 185** Ascomycota *Aspergillus brunneoviolaceus* // (mangrove mud), Xinglin Bay, Xiamen, China // Investigation on the chemical constituents of the marine-derived fungus strain *Aspergillus brunneoviolaceus* MF180246
- 396** // N // asperbrunneo acid // IA vs 1 bact. strain.
- 186** Ascomycota *Aspergillus spinosus* // (mangrove sediment) Yalong Bay, Sanya, Hainan Province, People's Republic of China // New prenylated indole-benzodiazepine-2,5-diones with α -glucosidase inhibitory activities from the mangrove-derived *Aspergillus spinosus*
- 397** // N // asperdinone A // IA vs 8 bact. strains; IA vs α -glucosidase.
- 398** // N // asperdinone B // IA vs 8 bact. strains; IA vs α -glucosidase.
- 399** // N // asperdinone C // IA vs 8 bact. strains; IA vs α -glucosidase.
- 400** // N // asperdinone D // IA vs 8 bact. strains; IA vs α -glucosidase.
- 401** // N // asperdinone E // IA vs 8 bact. strains; IA vs α -glucosidase.
- 402** // N // asperdinone F // IA vs 8 bact. strains; IA vs α -glucosidase.
- 403** // N // asperdinone G // IA vs 8 bact. strains; IA vs α -glucosidase.
- 404** // N // asperdinone H // IA vs 8 bact. strains; IA vs α -glucosidase.

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- 187** Ascomycota *Aspergillus terreus* // (mangrove sediment) Wenchang mangrove, Hainan, China // Plicatin C: a new cinnamate derivative from mangrove-derived fungus *Aspergillus terreus* DM62
405 // N // plicatin C // NT.
- 188** Ascomycota *Aspergillus ustus* // (mangrove sediment) Zhangjiangkou Mangrove National Nature Reserve, Fujian province, China // Discovery, identification, and mode of action of phenolics from marine-derived fungus *Aspergillus ustus* as antibacterial wilt agents
406 // N // carnemycin H // weak activ. vs 1 bact. strain.
407 // N // carnemycin I // weak activ. vs 1 bact. strain.
408 // N // stromemycin B // mod. activ. vs 1 bact. strain.
- 189** Ascomycota *Aureobasidium melanogenum* // (gammarid amphipod) North Pacific // Chemical constituents from the deep-sea-derived fungus *Aureobasidium melanogenum* LUO5
409 // N // (3*R*,5*R*,7*R*)-3,7-dihydroxy-5-decanolide // IA vs 1 murine CL; IA vs NO prod.
410 // N // (3*R*,5*R*,7*R*)-3,7-dihydroxy-5-dodecanolide // IA vs 1 murine CL; IA vs NO prod.
411 // N // (3*R*,5*R*,9*R*)-3,9-dihydroxy-5-decanolide // IA vs 1 murine CL; IA vs NO prod.
412 // N // (3*R*,5*R*,7*R*)-methyl 3,5,7-trihydroxydodecanoate // IA vs 1 murine CL; mod inhib. NO prod.
413 // N // (3*R*,5*R*,7*R*)-methyl 3,5,7-trihydroxydecanoate // IA vs 1 murine CL; IA vs NO prod.
414 // N // (3*R*,5*R*)-methyl 3-acetoxy-5-hydroxydecanoate // IA vs 1 murine CL; IA vs NO prod.
- 190** Ascomycota *Beauveria* sp. // (Irciniidae sponge) Paracel Islands // Beautoide A, an anti-osteoclastogenic sterol from *Beauveria* sp. NBUF147 associated with an Irciniidae sponge from the marine mesophotic zone
415 // N // beautoide A // weak anti-osteoporotic activ. *in vivo*.
- 191** Ascomycota *Ceriporia lacerata* // (mollusc, *Ostrea denselamellosa*) Changdao Island, Yantai, Shandong Province, China // A new lanostane-type triterpenoid from the marine shellfish symbiotic fungus *Ceriporia lacerata* CD7-5
416 // N // 3β-acetoxy-7,11-dioxolanosta-8,24-dien-21-oic acid // weak to mod. activ. vs 3 phytoplankton; weak activ. vs 1 zooplankton; IA vs 4 bact. strains.



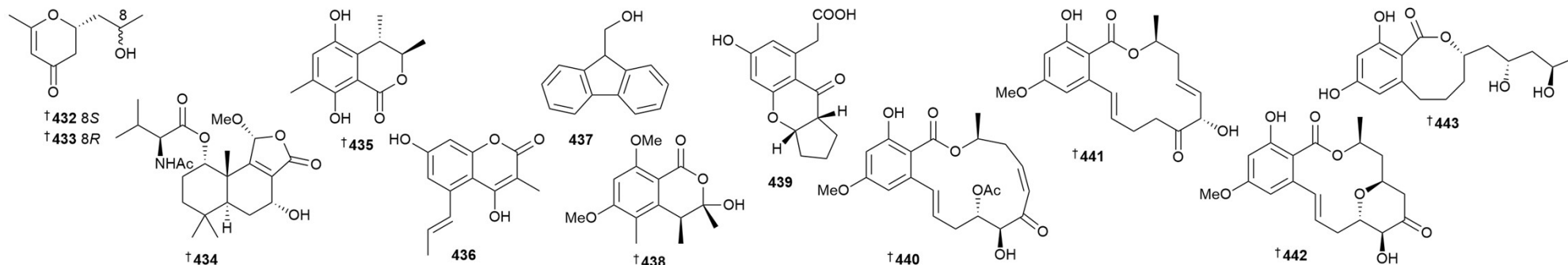
- 192** Ascomycota *Chaetomium globosum* // (sediment) South China Sea // Antimicrobial sesterterpenoids with a unique 5/8/6/5 tetracyclic carbon-ring-system and diepoxide polyketides from a deep sea-sediment-sourced fungus *Chaetomium globosum* SD-347
417 // N // sesterchaetin A // IA to weak activ. vs 7 bact. strains; IA to weak activ. vs 2 fungal strains.
418 // N // sesterchaetin B // IA to weak activ. vs 7 bact. strains; IA to weak activ. vs 2 fungal strains.
419 // N // chaetoketoic A // IA to mod. activ. vs 7 bact. strains; IA vs 2 fungal strains.
420 // N // chaetoketoic B // IA to mod. activ. vs 7 bact. strains; IA vs 2 fungal strains.
- 193** Ascomycota *Chaetomium globosum* // (sponge, *Dysidea* sp.) Yongxing Island, Xisha Islands // Marcytoglobosins A and B, cytochalasans from a marine sponge associated *Chaetomium globosum* 162105 fungus
421 // N // marcytoglobosin A // IA vs 5 bact. strains.
422 // N // marcytoglobosin B // IA vs 5 bact. strains.
- 194** Ascomycota *Chaetomium globosum* // (sponge, *Dysidea* sp.) Yongxing Island, China // Marchaetoglobins A–D: four cytochalasans with proangiogenic activity from the marine-sponge-associated fungus *Chaetomium globosum* 162105
423 // N // marchaetoglobin A // IA vs 10 bact. strains; IA vs pro-angiogenesis.
424 // N // marchaetoglobin B // IA vs 10 bact. strains; IA vs pro-angiogenesis.
425 // N // marchaetoglobin C // IA vs 10 bact. strains; IA vs pro-angiogenesis.
426 // N // marchaetoglobin D // IA vs 10 bact. strains; IA vs pro-angiogenesis.
- 195** Ascomycota *Chloridium* sp. // (red alga, *Champia parvula*) Yushan Island, China // Asepterpenedol A, a novel indole sesquiterpene with a rare 7/6/5/5/6/6-hexacyclic scaffold from a marine-derived fungus *Chloridium* sp. NBU3282
427 // N // asepterpenedol A // IA vs 3 HTCLs; IA to weak activ. vs 4 fungal strains.
- 196** Ascomycota *Cladosporium cladosporioides* // (cold-seep sediment) Hainan Island, China // Four dodecanoic acid derivatives from the cold-seep-derived fungus *Cladosporium cladosporioides* 8-1
428 // N // cladospolide I // IA to weak activ. vs 3 bact. strains; IA to weak activ. vs 4 fungal strains.
429 // N // cladospolide J // weak activ. vs 3 bact. strains; IA to weak activ. vs 4 fungal strains.
430 // M // methyl 11-hydroxy-4-oxododecanoate // IA vs 3 bact. strains; IA to weak activ. vs 4 fungal strains.
431 // M // 11-hydroxy-4-oxododecanoic acid // IA vs 3 bact. strains; IA to weak activ. vs 4 fungal strains.

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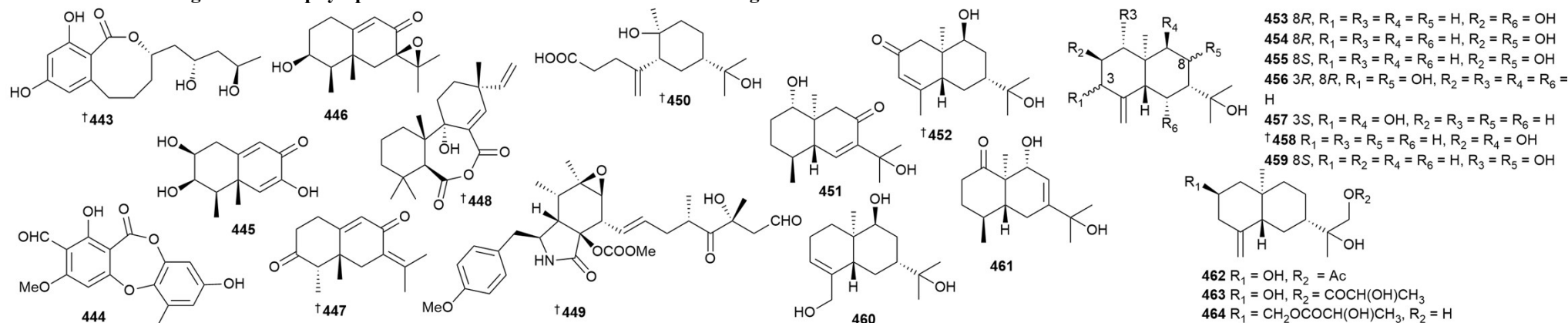


- 197** Ascomycota *Cladosporium halotolerans* // (sediment) South China Sea // Cytotoxic pyrone derivatives from the deep-sea-derived fungus *Cladosporium halotolerans* FS702
432 // N // (R)-6-((8S)-hydroxypropyl)-2-methyl-5,6-dihydro-4H-pyran-4-one // IA vs 4 HTCLs.
433 // N // (R)-6-((8R)-hydroxypropyl)-2-methyl-5,6-dihydro-4H-pyran-4-one // mod. cytotox. vs 4 HTCLs.
- 198** Ascomycota *Cladosporium* sp. // (sediment) South China Sea // Structurally diverse secondary metabolites from a deep-sea derived *Cladosporium* sp. SCSIO 41318 and their biological evaluation
434 // N // purpuride F // NT.
435 // N // (2R,3S)-5,8-dihydroxy-2,3,7-trimethylisochroman-1-one // NT.
436 // N // (E)-4,8-dihydroxy-9-methyl-6-(prop-1-en-1-yl)-2H-chromen-1-one // NT.
437 // M // 9-formylfluorene // NT.
- 199** Ascomycota *Cladosporium* sp. // (brown alga, *Feldmannia elachistaeformis*) Haikou Bay, Hainan, China // Bioactive chemical constituents from the marine-derived fungus *Cladosporium* sp. DLT-5
438 // N // cladosporinisochromanone // IA vs 2 fungal strains; IA vs PTP1B; weak neuroprotective effect.
- 200** Ascomycota *Curvularia aeria* // (unspecified barnacles) Kashima-city, Ibaraki Prefecture, Japan // A tricyclic aromatic polyketide isolated from the marine-derived fungus *Curvularia aeria*
439 // N // curvulanone // IA vs monoamine oxidase; IA vs SIRT1.
- 201** Ascomycota *Curvularia lunata* // (coral, *Pocillopora damicornis*) Weizhou Islands, Guangxi, China // Antiproliferative effects of resorcylic acid lactones from the Beibu Gulf coral-derived fungus *Curvularia lunata* GXIMD 02512 on prostate cancer cells
440 // N // curvulomycin A // weak cytotox. vs 2 HTCLs.
441 // N // curvulomycin B // IA vs 2 HTCLs.
442 // N // curvulomycin C // IA vs 2 HTCLs.
443 // N // curvulomycin D // IA vs 2 HTCLs.

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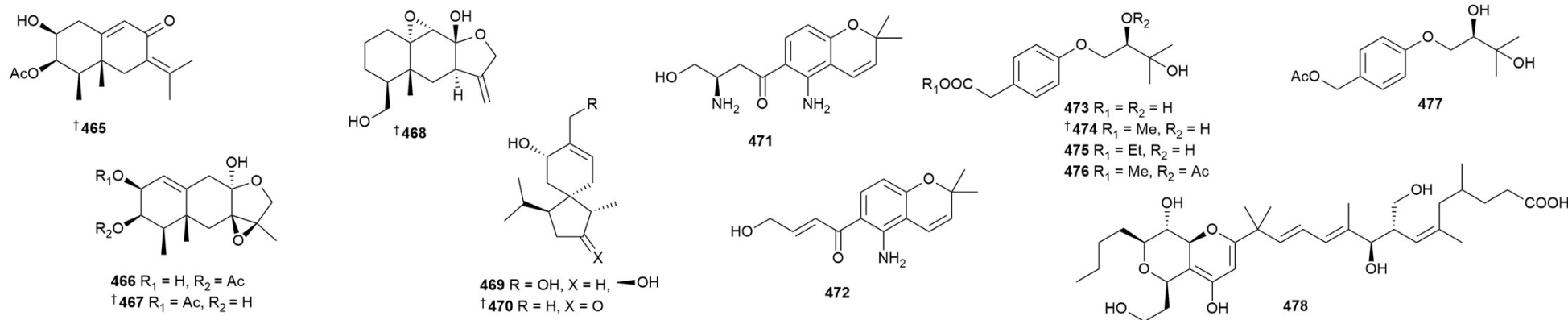
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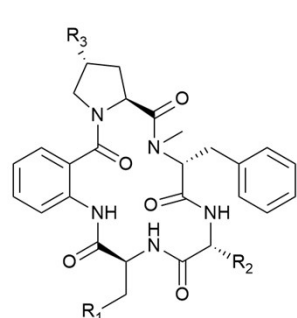
- 202** Ascomycota *Curvularia* sp. // */ Curdepsidone A induces intrinsic apoptosis and inhibits protective autophagy *via* the ROS/PI3K/AKT signaling pathway in HeLa cells
- 444** // R // curdepsidone A // weak cytotox. vs 1 HTCL.
- 203** Ascomycota *Emericellopsis maritima* // (sediment) Bay of Cádiz, Spain // Discovery of new eremophilanes from the marine-derived fungus *Emericellopsis maritima* BC17 by culture conditions changes: evaluation of cytotoxic and antimicrobial activities
- 445** // N // 3-deacetyl guignarderemophilane A // IA vs 5 HTCLs; IA vs 6 bact. strains; IA vs 2 fungal strains.
- 446** // N // (3S,4R,5R)-3-hydroxy-7(11)-epoxyeremophil-9-en-8-one // NT.
- 447** // N // 4-*epi*-isopetasone // IA vs 5 HTCLs; IA vs 6 bact. strains; IA vs 2 fungal strains.
- 204** Ascomycota *Eutypella scoparia* // (gastropod mollusc, *Onchidium* sp.) Xuwen, Guangdong province, China // Novel 6/7/6 ring system diterpenoids and cytochalasins from the fungus *Eutypella scoparia* GZU-4-19Y and their anti-inflammatory activity
- 448** // N // eutyditerpenoid A // IA vs NO prod.
- 449** // N // *seco*-phenochalasin B // IA vs NO prod.
- 205** Ascomycota *Eutypella* sp. // (sediment) South China Sea // Ent-eudesmane sesquiterpenoids with anti-neuroinflammatory activity from the marine-derived fungus *Eutypella* sp. F0219
- 450** // N // eutypelide A // IA vs anti-inflam.
- 451** // N // eutypelide B // IA vs anti-inflam.
- 452** // N // eutypelide C // IA vs anti-inflam.
- 453** // N // eutypelide D // IA vs anti-inflam.
- 454** // N // eutypelide E // IA vs anti-inflam.
- 455** // N // eutypelide F // IA vs anti-inflam.
- 456** // N // eutypelide G // IA vs anti-inflam.
- 457** // N // eutypelide H // IA vs anti-inflam.
- 458** // N // eutypelide I // IA vs anti-inflam.
- 459** // N // eutypelide J // IA vs anti-inflam.
- 460** // N // eutypelide K // IA vs anti-inflam.
- 461** // N // eutypelide L // IA vs anti-inflam.
- 462** // N // eutypelide M // IA vs anti-inflam.
- 463** // N // eutypelide N // IA vs anti-inflam.
- 464** // N // eutypelide O // IA vs anti-inflam.

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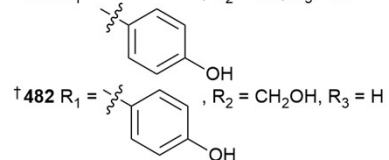
- 206** Ascomycota *Furcaterigmium furcatum* // (sediment) South China Sea // Eremophilane- and acorane-type sesquiterpenes from the deep-sea cold-seep-derived fungus *Furcaterigmium furcatum* CS-280 cultured in the presence of autoclaved *Pseudomonas aeruginosa* QDIO-4
465 // N // fureremophilane A // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
466 // N // fureremophilane B // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
467 // N // fureremophilane C // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
468 // N // fureremophilane D // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
469 // N // furacorane A // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
470 // N // furacorane B // IA vs 3 bact. strains; IA vs 3 fungal strains; IA vs COX-2; IA vs neuraminidase; IA vs ACE 2.
- 207** Ascomycota *Fusarium equiseti* // (seawater) Chile // New fusarochromanone derivatives from the marine fungus *Fusarium equiseti* UBOCC-A-117302
471 // N // deacetylfusarochromene // mod. to pot. cytotox. vs 2 HTCLs; IA vs 7 bact. strains; IA vs 1 fungus; IA vs 14 kinases.
472 // N // deacetamidofusarochrom-2',3-diene // IA to weak cytotox. vs 2 HTCLs; IA vs 7 bact. strains; IA vs 1 fungus; IA vs 14 kinases.
- 208** Ascomycota *Fusarium oxysporum* // (sediment) South China Sea // Chemical constituents of a marine-derived fungus *Fusarium oxysporum* F0888 and their antibacterial activity
473 // N // stachyline H // IA vs 7 bact. strains; IA vs 1 fungus.
474 // N // stachyline I // IA vs 7 bact. strains; IA vs 1 fungus.
475 // N // stachyline J // IA vs 7 bact. strains; IA vs 1 fungus.
476 // N // stachyline K // IA vs 7 bact. strains; IA vs 1 fungus.
477 // N // 4-(2,3-dihydroxy-3-methylbutoxy)benzyl acetate // IA vs 7 bact. strains; IA vs 1 fungus.
- 209** Ascomycota *Fusarium verticillioides* // (fish, *Sebastes schlegelii*) Yangma Island, Yantai, People's Republic of China // Novel polyketide from *Fusarium verticillioides* G102 as NPC1L1 inhibitors
478 // N // fusaritide A // IA vs 3 HTCLs; IA vs 4 bact. strains; IA vs 13 fungal strains.



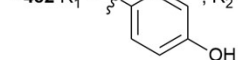
†479 R₁ = CH₂OH, R₂ = Me, R₃ = H

†480 R₁ = Ph, R₂ = CH₂OH, R₃ = H

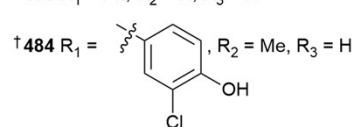
†481 R₁ = , R₂ = Me, R₃ = H



†482 R₁ = , R₂ = CH₂OH, R₃ = H

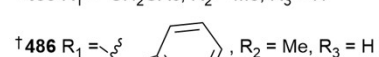


†483 R₁ = Ph, R₂ = H, R₃ = H

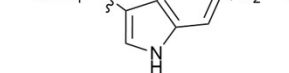


†484 R₁ = , R₂ = Me, R₃ = H

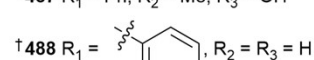
†485 R₁ = CH₂OAc, R₂ = Me, R₃ = H



†486 R₁ = , R₂ = Me, R₃ = H



†487 R₁ = Ph, R₂ = Me, R₃ = OH



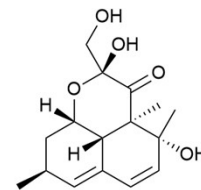
†488 R₁ = , R₂ = R₃ = H



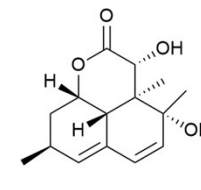
†489 R₁ = , R₂ = Me, R₃ = OH



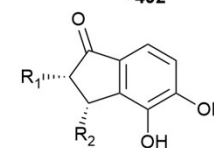
†490 R₁ = Ph, R₂ = Et, R₃ = H



†491

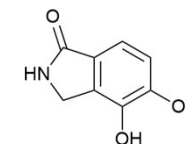


†492



†494 R₁ = H, R₂ = OH

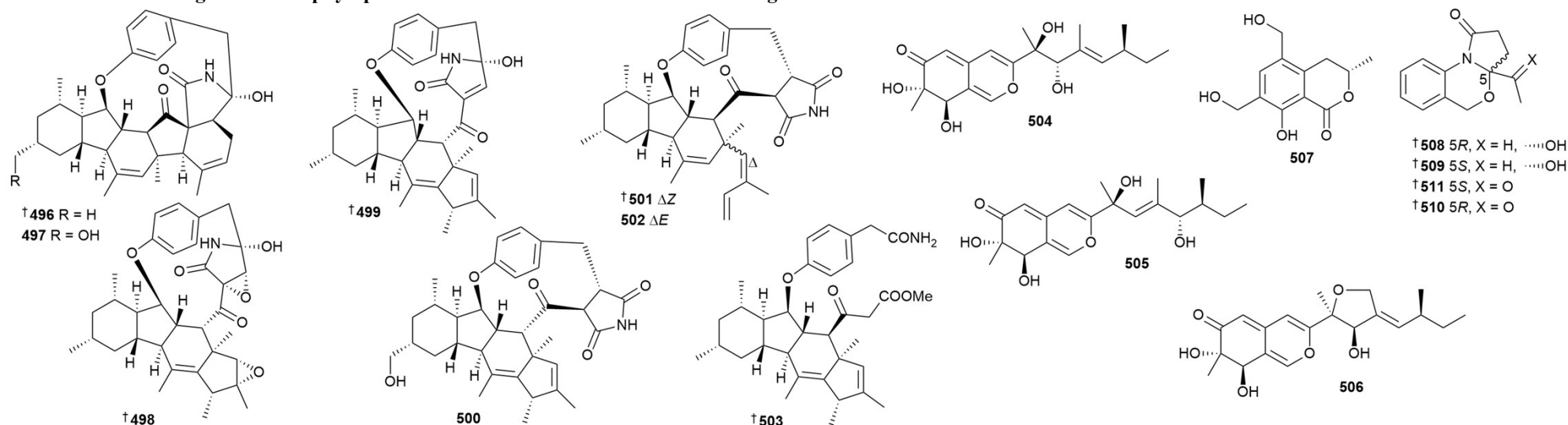
†495 R₁ = OH, R₂ = H



493

- 210** Ascomycota *Hamigera ingelheimensis* // (unspecified sea anemone) Mariana Trench // Cyclopeptide avellanins D–O with antimalarial activity from the Mariana Trench anemone-derived *Hamigera ingelheimensis* MSC5
- 479** // N // avellanin D // IA vs 18 HTCLs; IA vs 2 NHCLs; IA vs *P. falciparum*.
- 480** // N // avellanin E // IA vs 18 HTCLs; IA vs 2 NHCLs; weak activ. vs *P. falciparum*.
- 481** // N // avellanin F // IA vs 18 HTCLs; IA vs 2 NHCLs; weak activ. vs *P. falciparum*.
- 482** // N // avellanin G // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 483** // N // avellanin H // IA vs 18 HTCLs; IA vs 2 NHCLs; mod. activ vs *P. falciparum*.
- 484** // N // avellanin I // IA vs 18 HTCLs; IA vs 2 NHCLs; pot. activ. vs *P. falciparum*.
- 485** // N // avellanin J // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 486** // N // avellanin K // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 487** // N // avellanin L // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 488** // N // avellanin M // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 489** // N // avellanin N // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 490** // N // avellanin O // IA vs 18 HTCLs; IA vs 2 NHCLs; NT vs *P. falciparum*.
- 211** Basidiomycota *Irpex* sp. // (sponge, *Ircinia* sp.) Paracel Islands // Irpetones A and B, anti-osteoclastic heptaketides from a marine mesophotic zone *Ircinia* sponge-associated fungus *Irpex* sp. NBUF088
- 491** // N // irpetone A // weak inhib. 3 kinases; weak inhib. NF-κβ.
- 492** // N // irpetone B // NT.
- 212** Basidiomycota *Meira* sp. // (seawater) Chuuk Islands, Federated States of Micronesia // Meirols A–C: bioactive catecholic compounds from the marine-derived fungus *Meira* sp. 1210CH-42
- 493** // N // meirol A // weak antioxid.; IA vs 19 HTCLs; IA vs 1 NHCL; IA vs 6 bact. strains; IA vs α-glucosidase; IA vs tyrosinase.
- 494** // N // meirol B // weak antioxid.; IA vs 19 HTCLs; IA vs 1 NHCL; IA vs 6 bact. strains; IA vs α-glucosidase; IA vs tyrosinase.
- 495** // N // meirol C // weak antioxid.; IA vs 19 HTCLs; IA vs 1 NHCL; IA vs 6 bact. strains; IA vs α-glucosidase; IA vs tyrosinase.

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213 Ascomycota *Microascus* sp. // (gorgonian coral, *Melitodes squamata*) Sanya, Hainan, China // Microascones, decahydrofluorene-class alkaloids from the marine-derived fungus *Microascus* sp. SCSIO 41821

496 // N // microascone A // IA vs 7 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

497 // N // microascone B // IA vs 7 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

498 // N // 2,3-epoxyphomapyrrolidone C // IA to weak activ. vs 7 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

499 // N // 14,16-epiascomylactam B // IA to pot. activ. vs 11 bact. strains, weak activ. vs 1 fungus; IA vs 5 PTPs.

500 // N // 24-hydroxyphomapyrrolidone A // IA vs 2 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

501 // N // microascone C // IA vs 5 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

502 // N // microascone D // IA vs 5 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

503 // N // microascone E // IA vs 7 bact. strains, NT vs 1 fungus; IA vs 5 PTPs.

214 Ascomycota *Neopestalotiopsis* sp. // (sediment) Beibu Gulf, China // Proangiogenic azaphilones from the marine-derived fungus *Neopestalotiopsis* sp. HN-1-6

504 // N // 10-*epi*-pestaphilone G // IA vs 6 HTCLs; IA vs 4 bact. strains; IA vs 1 fungus.

505 // N // 12-*epi*-pestaphilone H // IA vs 6 HTCLs; IA vs 4 bact. strains; IA vs 1 fungus.

506 // N // pestaphilone J // IA vs 6 HTCLs; IA vs 4 bact. strains; IA vs 1 fungus; IA vs proangiogenesis.

507 // N // (*S*)-8-hydroxy-5,7-bis(hydroxymethyl)-3-methylisochroman-1-one // IA vs 6 HTCLs; IA vs 4 bact. strains; IA vs 1 fungus.

215 Ascomycota *Nigrospora oryzae* // (mangrove sediment) Zhuhai Mangrove Special Protected Area, Guangdong Province, China // Bioactive alkaloids from the mangrove-derived fungus *Nigrospora oryzae* SYSU-MS0024

508 // N // nigrosporine A // IA vs anti-inflam.; IA vs 1 HTCL; IA vs AChE; IA vs antioxid.

509 // N // nigrosporine B // IA vs anti-inflam.; IA vs 1 HTCL; IA vs AChE; IA vs antioxid.

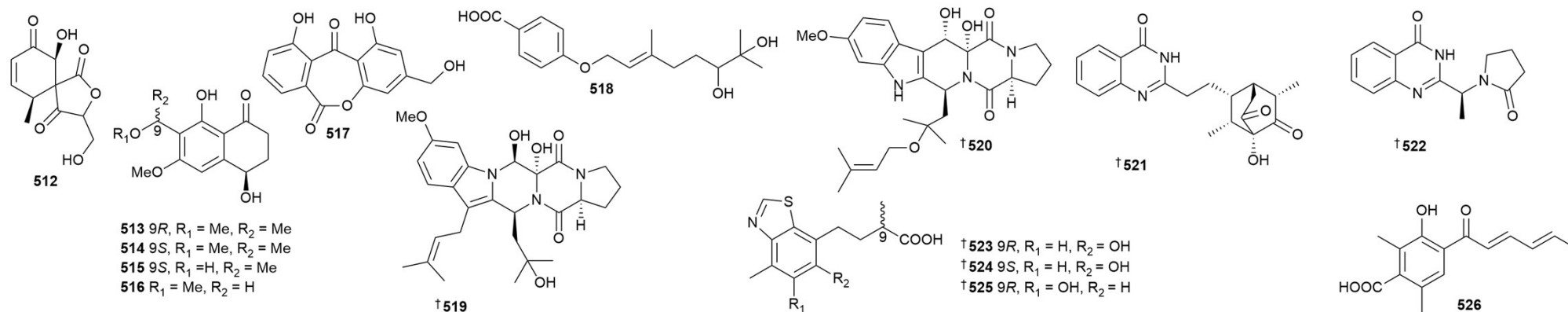
510 // N // (+)-nigrosporine C // IA vs anti-inflam.; IA vs 1 HTCL; IA vs AChE; IA vs antioxid.

511 // N // (–)-nigrosporine C // IA vs anti-inflam.; IA vs 1 HTCL; IA vs AChE; IA vs antioxid.

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2 Marine microorganisms and phytoplankton: 2.3 Marine-sourced fungi



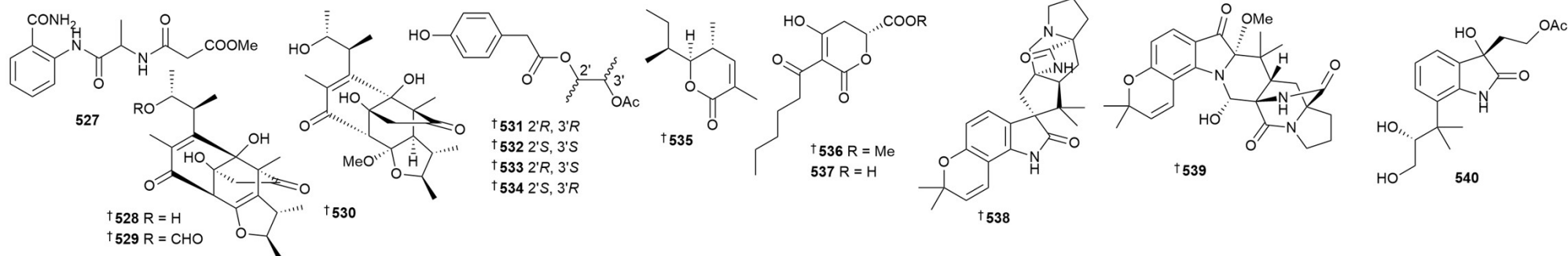
- 216** Ascomycota *Paraconiothyrium sporulosum* // (sandfish eggs, *Arctoscopus japonicas*) // Discovery of novel antioomycete metabolites from the marine-derived fungus *Paraconiothyrium sporulosum*
 512 // N // mycosporulonol // IA vs 1 oomycete strain.
 513 // N // parasporulenone A // IA vs 1 oomycete strain.
 514 // N // parasporulenone B // IA vs 1 oomycete strain.
 515 // N // parasporulenone C // IA vs 1 oomycete strain.
 516 // N // 10-norsporulenone // IA vs 1 oomycete strain.
- 217** Ascomycota *Parengyodontium album* // (*Acropora* sp.) Nansha Islands, China // Alternaphenol B2, a new IDH1 inhibitor from the coral-derived fungus *Parengyodontium album* SCSIO SX7W11
 517 // N // alternaphenol B2 // IA vs prolyl hydroxylase protein 2 (PHD2); IA vs isocitrate dehydrogenase mutant R132H (IDH1m)
- 218** Ascomycota *Penicillium arabicum* // (sediment) Zhuhai, Guangdong Province, China // A new phenyl 6,7-dihydroxygeranyl ether derivative from a marine-derived fungus strain of *Penicillium arabicum* ZH3-9
 518 // N // (Z)-4-((6,7-dihydroxy-3,7-dimethyloct-2-en-1-yl)oxy)benzoic acid // IA vs 2 bact. strains; IA vs 1 fungus.
- 219** Ascomycota *Penicillium brasilianum* // (seawater) Huanghua, Hebei Province, China // Novel anti-inflammatory diketopiperazine alkaloids from the marine-derived fungus *Penicillium brasilianum*
 519 // N // penipiperazine A // weak inhib. NO prod.; IA vs 4 HTCLs.
 520 // N // penipiperazine B // weak inhib. NO prod.; IA vs 4 HTCLs.
- 220** Ascomycota *Penicillium chrysogenum* // (unidentified soft coral) Xisha Islands, China // Heterocycles and a sorbicillinoid from the coral-derived fungus *Penicillium chrysogenum*
 521 // N // chrysoquinazolinone A // IA vs 6 HTCLs.
 522 // N // chrysoquinazolinone B // IA vs 6 HTCLs.
 523 // N // (–)-chrysobenzothiazole A // IA vs 6 HTCLs.
 524 // N // (+)-chrysobenzothiazole A // IA vs 6 HTCLs.
 525 // N // chrysobenzothiazole B // IA vs 6 HTCLs.
 526 // N // 4-carboxylsorbicillin // IA vs 6 HTCLs.

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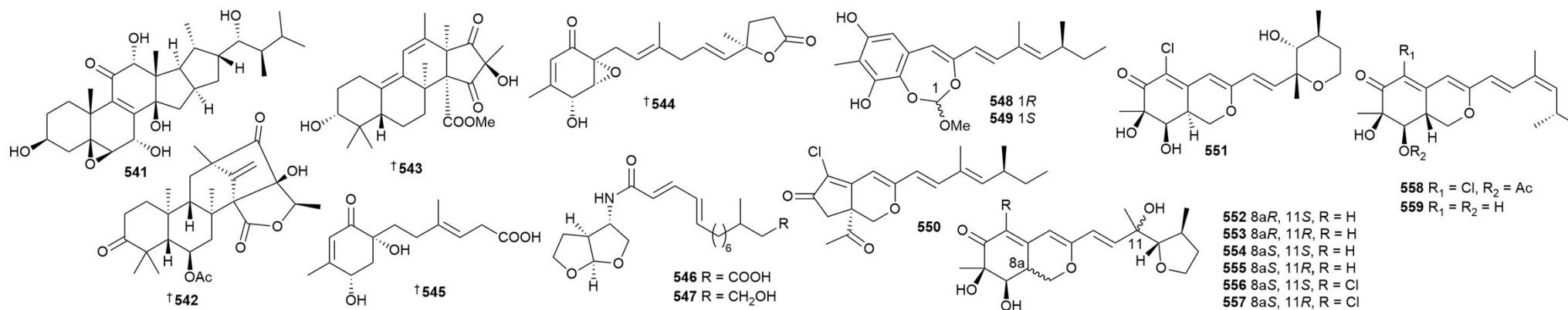


- 221** Ascomycota *Penicillium chrysogenum* // (unidentified soft coral) Cu Lao Cham Island, Quang Nam province, Vietnam // Secondary metabolites from marine fungus *Penicillium chrysogenum* VH17 and their antimicrobial and cytotoxic potential
527 // N // methyl 3-((1-((2-carbamoylphenyl)amino)-1-oxopropan-2-yl)amino)-3-oxopropanoate // IA vs 3 HTCLs; IA vs 6 bact. strains; IA vs 1 fungus.
- 222** Ascomycota *Penicillium citrinum* // (sediment) Kueishantao, Taiwan // Dicitrinols A–C: citrinin derivatives from hydrothermal vent-associated fungus *Penicillium citrinum* TW132-59
528 // N // dicitrinol A // weak activ. vs 3 bact. strains; weak to mod. activ. vs 3 fungal strains.
529 // N // dicitrinol B // IA to weak activ. vs 3 bact. strains; weak to mod. activ. vs 3 fungal strains.
530 // N // dicitrinol C // IA vs 3 bact. strains; mod. activ. vs 3 fungal strains.
- 223** Ascomycota *Penicillium corylophilum* // (sediment) South China Sea // New hydroxyphenylacetic acids and α -pyrone derivative from the deep-sea cold seep sediment-derived fungus *Penicillium corylophilum* CS-682
531 // N // (–)-corylophenol A // IA vs 7 bact. strains (as rac. mixt.).
532 // N // (+)-corylophenol A // IA vs 7 bact. strains (as rac. mixt.).
533 // N // (–)-corylophenol B // IA vs 7 bact. strains (as rac. mixt.).
534 // N // (+)-corylophenol B // IA vs 7 bact. strains (as rac. mixt.).
535 // N // corylopyrone A // IA to weak activ. vs 7 bact. strains.
- 224** Ascomycota *Penicillium crustosum* // (ex sediment) Dongying, Shandong, China // New antibacterial dihydropyrones induced by co-culture of *Penicillium crustosum* PRB-2 and *Penicillium citrinum* HDN11-186
536 // N // rhytismatone C // IA vs 12 HTCLs; IA to weak activ. vs 7 bact. strains; IA vs 1 fungus.
537 // N // rhytismatone D // IA vs 12 HTCLs; IA vs 7 bact. strains; IA vs 1 fungus.
- 225** Ascomycota *Penicillium janthinellum* // (mangrove sediment) Dongzhai Gang Harbour Mangrove Natural Reserve Area, Hainan Island, China // Targeted isolation of prenylated indole alkaloids from the marine-derived fungus *Penicillium janthinellum* HK1-6 using molecular networking
538 // R // notoamide X // IA vs 1 bact. strain.
- 226** Ascomycota *Penicillium oxalicum* // (red alga, *Rhodomela confervoides*) Lianyungang, Jiangsu, China // New cytotoxic indole derivatives with anti-FADU potential produced by the endophytic fungus *Penicillium oxalicum* 2021CDF-3 through the OSMAC strategy
539 // N // asperinamide B // IA vs 4 HTCLs.
540 // N // peniochroloid B // IA to mod. cytotox. vs 4 HTCLs.

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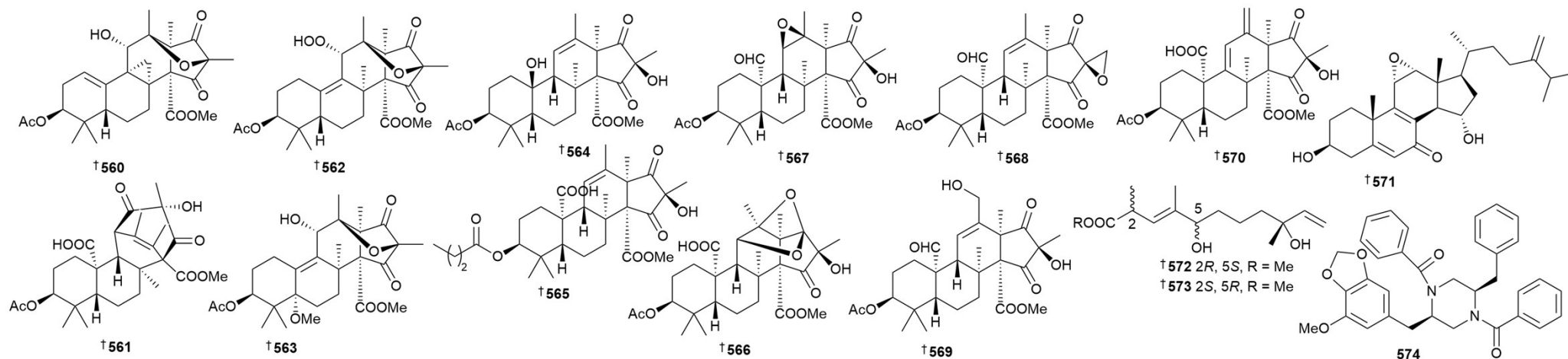


- 227** Ascomycota *Aspergillus oxalicum* // (red alga, *Rhodomela confervoides*) Lianyungang, China // Peniciloxatone A, a new polyoxygenated ergostane steroid isolated from the marine alga-sourced fungus *Penicillium oxalicum* 2021CDF-3
541 // N // peniciloxatone A // IA to weak cytotox. vs 3 HTCLs.
- 228** Ascomycota *Penicillium pancosmium* // (sediment) Western Pacific // DMOA-derived polycyclic meroterpenoids with antiviral activities from the deep-sea-derived fungus *Penicillium pancosmium* A6A
542 // N // pancosterpenoid A // IA vs 1 HTCL; IA vs 1 virus strain.
543 // N // pancosterpenoid B // IA vs 1 HTCL; IA vs 1 virus strain.
- 229** Ascomycota *Penicillium rubens* // (sediment) Sanya, Hainan Province, China // Secondary metabolites from marine-derived fungus *Penicillium rubens* BTBU20213035
544 // N // penirubenone A // IA vs 2 bact. strains; IA vs 1 fungus.
545 // N // penirubenone B // IA vs 2 bact. strains; IA vs 1 fungus.
546 // N // penirubenamide A // IA vs 2 bact. strains; IA vs 1 fungus.
547 // N // penirubenamide B // IA vs 2 bact. strains; IA vs 1 fungus.
- 230** Ascomycota *Penicillium sclerotium* // (coral, *Pocillopora verrucosa*) Xisha Islands, China // Azaphilone pigments from the marine-derived *Penicillium sclerotium* UJNMF 0503 and their neuroprotective potential against H₂O₂-induced cell apoptosis through modulating PI3K/Akt pathway
548 // N // pensclazaphilone A // No neuroprotective effect.
549 // N // pensclazaphilone B // No neuroprotective effect.
550 // N // pensclazaphilone C // No neuroprotective effect.
551 // N // pensclazaphilone D // No neuroprotective effect.
552 // N // pensclazaphilone E // No neuroprotective effect.
553 // N // pensclazaphilone F // No neuroprotective effect.
554 // N // pensclazaphilone G // No neuroprotective effect.
555 // N // pensclazaphilone H // No neuroprotective effect.
556 // N // pensclazaphilone I // No neuroprotective effect.
557 // N // pensclazaphilone G // No neuroprotective effect.
558 // N // pensclazaphilone K // No neuroprotective effect.
559 // N // pensclazaphilone L // No neuroprotective effect.

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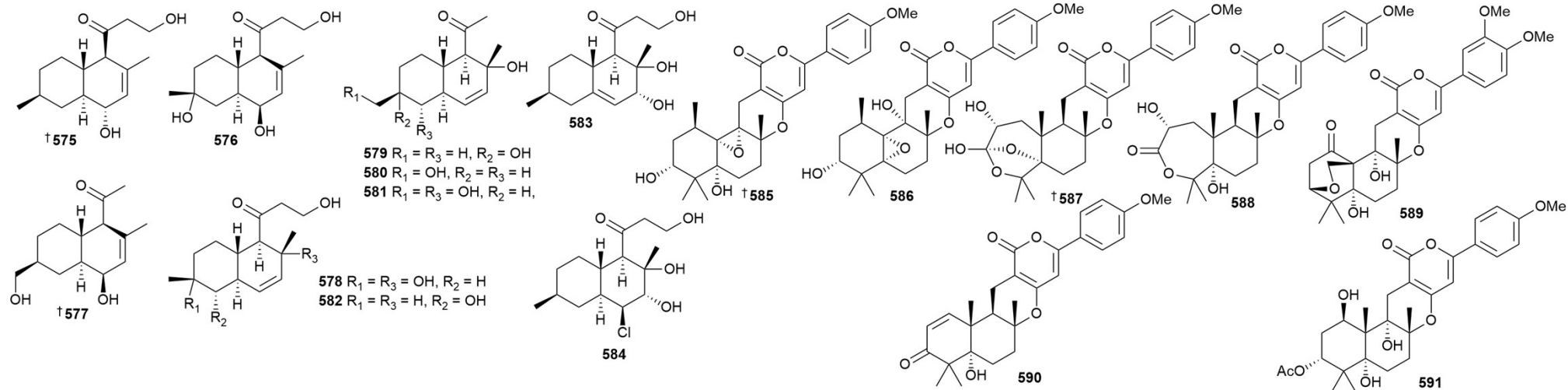


- 231** Ascomycota *Penicillium simplicissimum* // (unspecified sponge) Yongxing Island, Paracel Islands, China // Penisimplinoids A-K, highly oxygenated andrastin-type meroterpenoids with diverse activities from the marine-derived fungus *Penicillium simplicissimum*
560 // N // penisimplinoid A // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.
561 // N // penisimplinoid B // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
562 // N // penisimplinoid C // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
563 // N // penisimplinoid D // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
564 // N // penisimplinoid E // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
565 // N // penisimplinoid F // IA to weak cytotox. vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
566 // N // penisimplinoid G // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; weak activ. vs pro-angiogenesis.
567 // N // penisimplinoid H // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.
568 // N // penisimplinoid I // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
569 // N // penisimplinoid J // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; IA vs pro-angiogenesis.
570 // N // penisimplinoid K // IA vs 4 HTCLs; IA vs 1 NHCL; IA vs anti-inflam.; weak activ. vs pro-angiogenesis.
- 232** Ascomycota *Penicillium variable* // (red alga, *Rhodomela confervoides*) Huiquan Gulf, Qingdao, China // A new steroid with potent antimicrobial activities and two new polyketides from *Penicillium variable* EN-394, a fungus obtained from the marine red alga *Rhodomela confervoides*
571 // N // penivarid A // IA to mod. activ. vs 26 bact. strains.
572 // N // penivaride A // IA to mod. activ. vs 26 bact. strains.
573 // N // penivaride B // IA to mod. activ. vs 26 bact. strains.
- 233** Ascomycota *Penicillium velutinum* // (rhizome, seagrass, *Zostera marina*) Sea of Japan // New piperazine derivatives helvamides B–C from the marine-derived fungus *Penicillium velutinum* ZK-14 uncovered by OSMAC (One Strain Many Compounds) strategy
574 // N // helvamide B // IA vs 2 HTCLs; IA vs 1 fungus; IA vs antioxid.

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234 Ascomycota *Penicillium yezoense* // (seagrass, *Zostera marina*) Sea of Japan // New zosteropenillines and pallidopenillines from the seagrass-derived fungus *Penicillium yezoense* KMM 4679

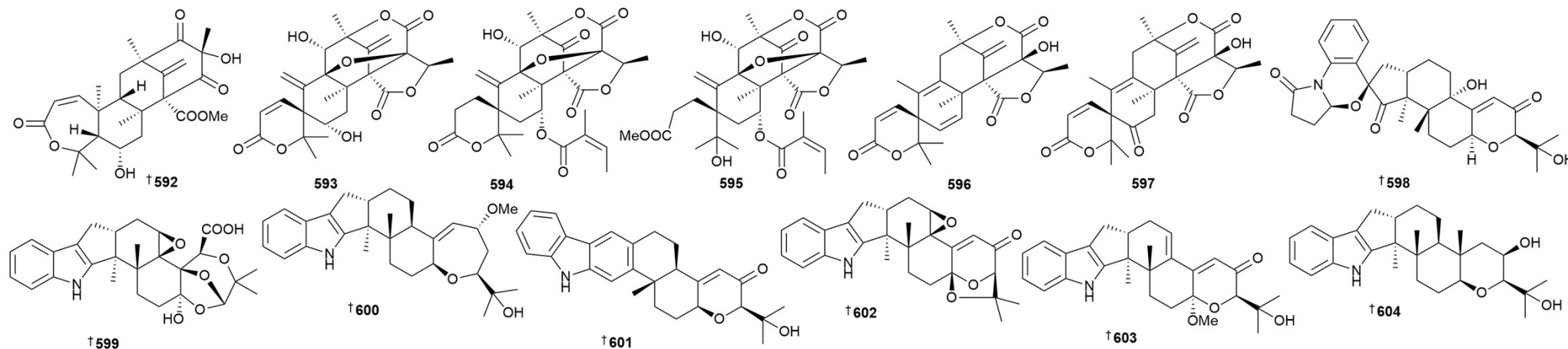
- 575 // N // zosteropenilline M // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 576 // N // 11-*epi*-8-hydroxyzosteropenilline M // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 577 // N // zosteropenilline N // NT.
 578 // N // 8-hydroxyzosteropenilline G // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 579 // N // zosteropenilline O // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 580 // N // zosteropenilline P // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 581 // N // zosteropenilline Q // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 582 // N // 13-dehydroxypallidopenilline A // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 583 // N // zosteropenilline R // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.
 584 // N // zosteropenilline S // IA vs 3 HTCLs; IA vs 1 NHCL; no cytoprotective effect.

235 Ascomycota *Penicillium* sp. // (unspecified soft coral) Fiery Cross Reef, South China Sea // HPPO-derived meroterpenoids from the marine-derived fungus *Penicillium* sp. SCSIO 41691

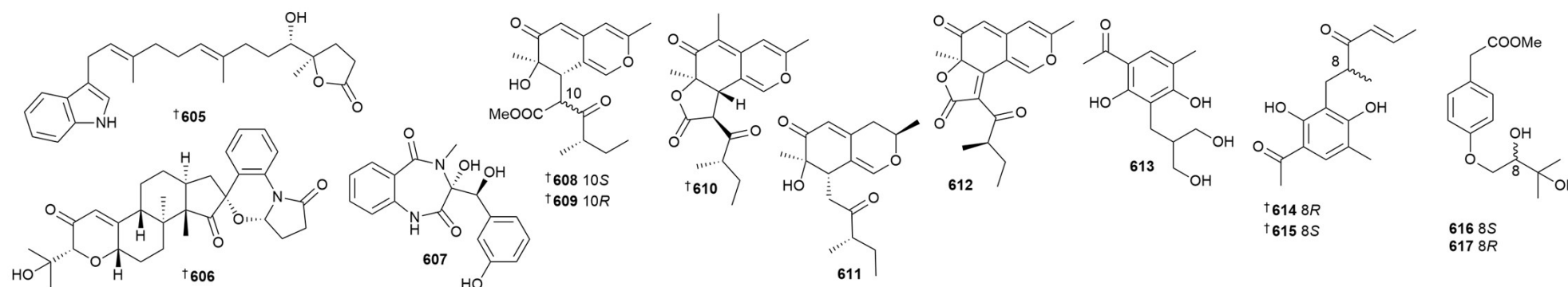
- 585 // N // 1-methyl-12a,12b-epoxyarisugacin M // IA vs 1 HTCL; IA vs NO prod.
 586 // N // 1-methyl-4a,12b-epoxyarisugacin M // IA vs 1 HTCL; IA vs NO prod.
 587 // N // 2,3-dihydroxy-3,4a-epoxy-12a-dehydroxyisoterreulactone A // IA vs 1 HTCL; IA vs NO prod.
 588 // N // 2-hydroxy-12a-dehydroxyisoterreulactone A // IA vs 1 HTCL; IA vs NO prod.
 589 // N // 3'-demethoxyteritrems B' // IA vs 1 HTCL; IA vs NO prod.
 590 // N // 4a-hydroxyarisugacin P // IA vs 1 HTCL; IA vs NO prod.
 591 // N // 1-*epi*-arisugacin H // IA vs 1 HTCL; IA vs NO prod.

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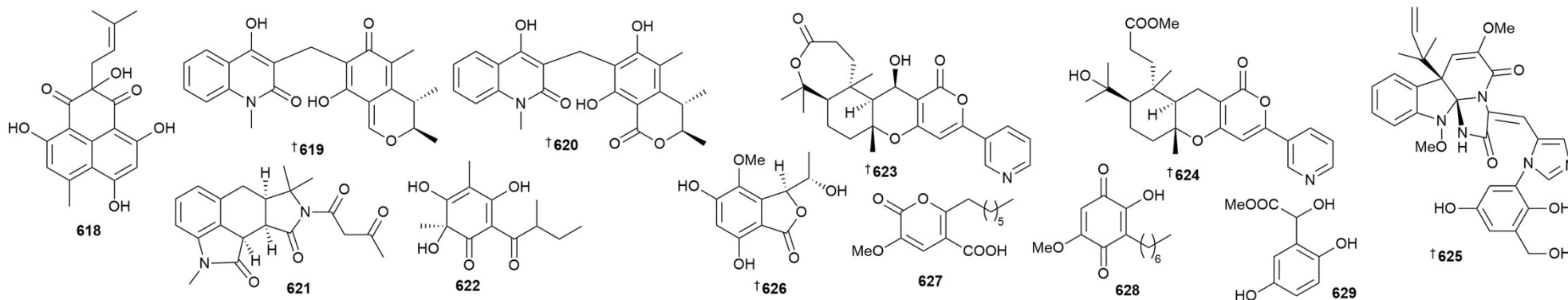


- 236** Ascomycota *Penicillium* sp. // (red alga, *Rhodomela confervoides*) Dalian, Liaoning Province, China // Penicianstinoids F-K, six undescribed meroterpenoids from the marine algicolous fungus *Penicillium* sp. RR-DL-1-7
592 // N // penicianstinoid F // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
593 // N // penicianstinoid G // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
594 // N // penicianstinoid H // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
595 // N // penicianstinoid I // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
596 // N // penicianstinoid J // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
597 // N // penicianstinoid K // IA vs 4 bact. strains; IA vs 4 phytoplankton; IA vs 1 zooplankton.
- 237** Ascomycota *Penicillium* sp. // (crab, *Dardanus scutellatus*) Yinyu Island, Hainan province, China // Anti-diabetic and anti-inflammatory indole diterpenes from the marine-derived fungus *Penicillium* sp. ZYX-Z-143
598 // N // penpaxilloid A // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.
599 // N // penpaxilloid B // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.
600 // N // penpaxilloid C // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.
601 // N // penpaxilloid D // IA vs PTP1B, IA vs α -glucosidase; weak inhib. NO prod.
602 // N // penpaxilloid E // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.
603 // N // 7-methoxypaxilline-13-ene // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.
604 // N // 10-hydroxy-paspaline // IA vs PTP1B, IA vs α -glucosidase; IA vs NO prod.



- 238** Ascomycota *Penicillium* sp. // (brown alga, *Sargassum* sp.) Yongxing Island, Sansha, Hainan, China // Antibacterial indole-diterpenoid alkaloids from the marine fungus *Penicillium* sp. ZYX-Z-718
605 // N // penpaxilloid F // IA vs 5 bact. strains.
606 // N // penpaxilloid G // IA vs 5 bact. strains.
- 239** Ascomycota *Penicillium* sp. // (seawater) New Britain // Discovery of 2,5-diketopiperazine alkaloids with quorum sensing inhibitory activity from the marine fungus *Penicillium* sp. ZJUT-34
607 // N // *O*-dihydroxycyclopentol // IA vs 6 bact. strains.
- 240** Ascomycota *Penicillium* sp. // (sediment) South China Sea // Neuroprotective azaphilones from a deep-sea derived fungus *Penicillium* sp. SCSIO41030
608 // N // penineulone A // IA vs 3 HTCLs; IA vs 1 virus strain.
609 // N // penineulone B // IA vs 3 HTCLs; IA vs 1 virus strain.
610 // N // penineulone C // IA vs 3 HTCLs; IA vs 1 virus strain.
611 // N // penineulone D // IA vs 3 HTCLs; IA vs 1 virus strain.
612 // N // penineulone E // IA vs 3 HTCLs; IA vs 1 virus strain.
- 241** Ascomycota *Penicillium* sp. // (sediment) Svalbard Islands, Arctic // Genomics- and transcriptomics-guided discovery of clavatols from Arctic fungi *Penicillium* sp. MYA5
613 // N // penicophenone F // IA to weak activ. vs 6 bact. strains.
- 242** Ascomycota *Penicillium* sp. // (seawater) // Targeted discovery of polyketides with antioxidant activity through integrated omics and cocultivation strategies
614 // N // (–)-peniphenone // IA vs antioxid.
615 // N // (+)-peniphenone // IA vs antioxid.
- 243** Ascomycota *Penicillium* sp. // (seawater) Marceau Trench // Discovery of prenilyltransferase-guided hydroxyphenylacetic acid derivatives from marine fungus *Penicillium* sp. W21C371
616 // N // (–)-peniprenydiol A // IA vs β -glucuronidase.
617 // N // (+)-peniprenydiol A // IA vs β -glucuronidase.

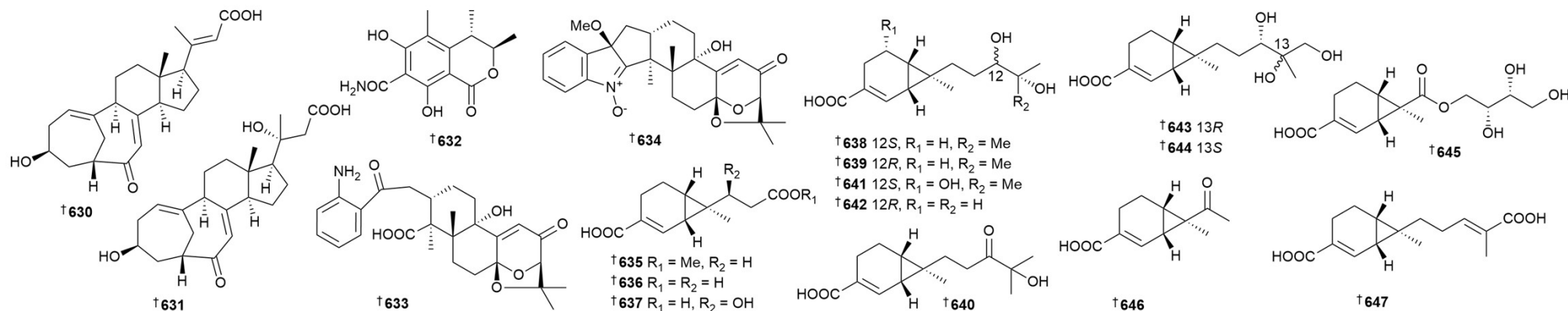
2 Marine microorganisms and phytoplankton: 2.3 Marine-sourced fungi



- 244** Ascomycota *Penicillium* sp. // (seafoam) New River beach, New Brunswick, Canada // Isolation of an antimicrobial racemic phenalenone derivative from a marine-derived *Penicillium* sp. fungus
618 // N // 2,4,6,9-tetrahydroxy-7-methyl-2-prenyl-1*H*-phenalene-1,3(2*H*)-dione // IA to weak activ. vs 7 bact. strains; IA vs 2 fungal strains.
- 245** Ascomycota *Penicillium* sp. // (unspecified starfish) South China Sea // Penicilloneines A and B, quinolone–citrinin hybrids from a starfish-derived *Penicillium* sp.
619 // N // penicilloneine A // pot. activ. vs 1 fungus.
620 // N // penicilloneine B // mod. activ. vs 1 fungus.
- 246** Ascomycota *Penicillium* sp. // (soft coral, *Sinularia* sp.) Beihai, Guangxi Province, China // Bioactive secondary metabolites isolated from the soft coral derived *Penicillium* sp. SCSIO 41038
621 // N // speradine I // IA vs 2 HTCLs; IA vs AChE.
622 // N // speradine J // IA vs 2 HTCLs; IA vs AChE.
- 247** Ascomycota *Penicillium robsamsonii* // (rhizosphere sediment *Sonneratia paracaseolaris*) Dongzhai Gang Harbour Mangrove Natural Reserve Area, Hainan Island, China // Alkaloid-metabolites from the mangrove-derived fungus *Penicillium robsamsonii* HNNU0006
623 // N // pyripyropene V // IA vs 6 fungal strains; IA vs 2 HTCLs.
624 // N // pyripyropene W // IA vs 6 fungal strains; IA vs 2 HTCLs.
625 // N // penicioxan A // IA vs 6 fungal strains; IA vs 2 HTCLs.
- 248** Ascomycota *Penicillium* sp. // (mangrove sediment) Gaoqiao Mangrove, Zhanjiang, China // New bioactive polyketides from the mangrove-derived fungus *Penicillium* sp. SCSIO 41411
626 // N // embeurekol D // IA vs 2 bact. strains; IA vs 3 HTCLs.
627 // N // 7-heptyl-4-methoxy-6-oxo-3*H*-pyran-2-carboxylic acid // IA vs 2 bact. strains; IA vs 3 HTCLs.
628 // N // embelin A // IA vs 2 bact. strains; IA vs 3 HTCLs.
629 // N // methyl α ,2,5-trihydroxybenzeneacetate // NT.

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Compound number // Status // Compound name // Biological activity and Other information



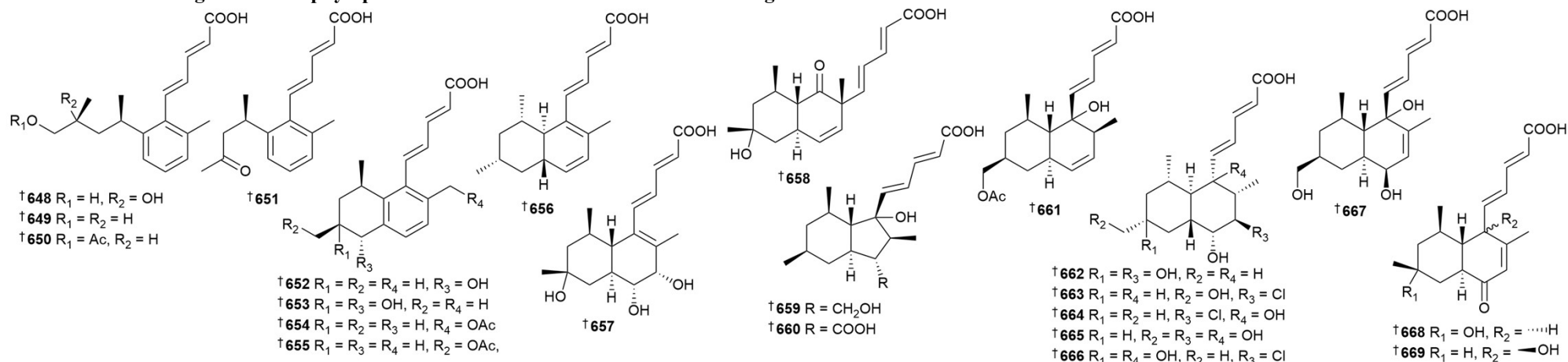
- 249** Ascomycota *Penicillium* sp. // (mangrove sediment) Zhangjiang, Guangdong province, China // Two C23-steroids and a new isocoumarin metabolite from mangrove sediment-derived fungus *Penicillium* sp. SCSIO 41429
630 // N // cyclocitrinoic acid A // IA vs 1 lipase; AI vs antioxid.
631 // N // cyclocitrinoic acid B // IA vs 1 lipase; AI vs antioxid.
632 // N // (3*R*,4*S*)-6,8-dihydroxy-3,4,5-trimethyl-7-carboxamidelisocoumarin // IA vs 1 lipase; AI vs antioxid.
- 250** Ascomycota *Penicillium* sp. // (mangrove sediment) Gaoqiao Mangrove, Zhanjiang, Guangdong, China // Peniditerpenoids A and B: oxidized Indole diterpenoids with osteoclast differentiation inhibitory activity from a mangrove-sediment-derived *Penicillium* sp.
633 // N // peniditerpenoid A // IA vs anti-inflam.
634 // N // peniditerpenoid B // IA vs anti-inflam.
- 251** Ascomycota *Penicillium* sp. // (mangrove sediment) Gaoqiao, Lianjiang, Guangdong Province, China // Discovery of a novel anti-osteoporotic agent from marine fungus-derived structurally diverse sirenins
635 // N // eupenicisirenin C // weak inhib. activation NF-κβ by LPS.
636 // N // eupenicisirenin D // IA vs activation NF-κβ by LPS.
637 // N // eupenicisirenin E // IA vs activation NF-κβ by LPS.
638 // N // eupenicisirenin F // IA vs activation NF-κβ by LPS.
639 // N // eupenicisirenin G // IA vs activation NF-κβ by LPS.
640 // N // eupenicisirenin H // IA vs activation NF-κβ by LPS.
641 // N // eupenicisirenin I // IA vs activation NF-κβ by LPS.
642 // N // eupenicisirenin J // NT.
643 // N // eupenicisirenin K // NT.
644 // N // eupenicisirenin L // NT.
645 // N // eupenicisirenin M // NT.
646 // N // eupenicisirenin N // IA vs activation NF-κβ by LPS.
647 // N // eupenicisirenin O // NT.

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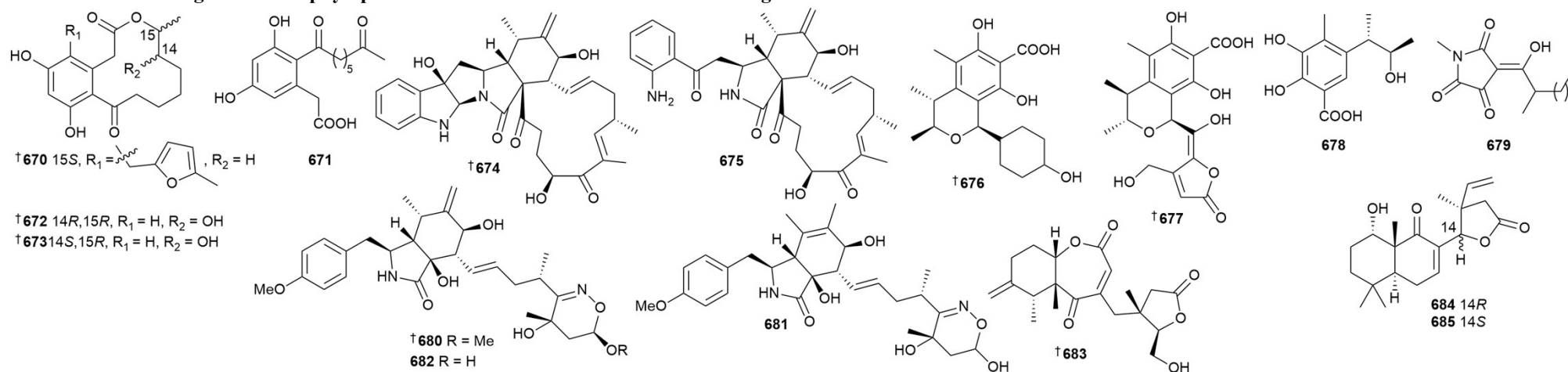
- 252 Ascomycota *Penicillium steckii*, Ascomycota *Penicillium citrinum* // (root, *Avicennia marina*) Zhanjiang, Guangdong province, China // Identifying marine-derived tanzawaic acid derivatives as novel inhibitors against osteoclastogenesis and osteoporosis via downregulation of NF- κ B and NFATc1 activation
- 648 // N // penicisteck acid E // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis
- 649 // N // penicisteck acid F // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 650 // N // penicisteck acid G // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 651 // N // penicisteck acid H // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 652 // N // penicisteck acid I // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis
- 653 // N // (5S,6R,8R)-penitanzacid G // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 654 // N // penicisteck acid J // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 655 // N // penicisteck acid K // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 656 // N // penicisteck acid L // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 657 // N // penicisteck acid M // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 658 // N // penicisteck acid N // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 659 // N // penicisteck acid O // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 660 // N // penicisteck acid P // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 661 // N // penicisteck acid Q // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 662 // N // penicisteck acid R // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 663 // N // penicisteck acid S // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 664 // N // penicisteck acid T // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 665 // N // penicisteck acid U // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 666 // N // penicisteck acid V // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 667 // N // penicisteck acid W // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.
- 668 // N // penicisteck acid X // IA vs activation NF- κ B by LPS; IA vs osteoclastogenesis.
- 669 // N // penicisteck acid Y // weak inhib. activation NF- κ B by LPS; weak inhib. osteoclastogenesis.

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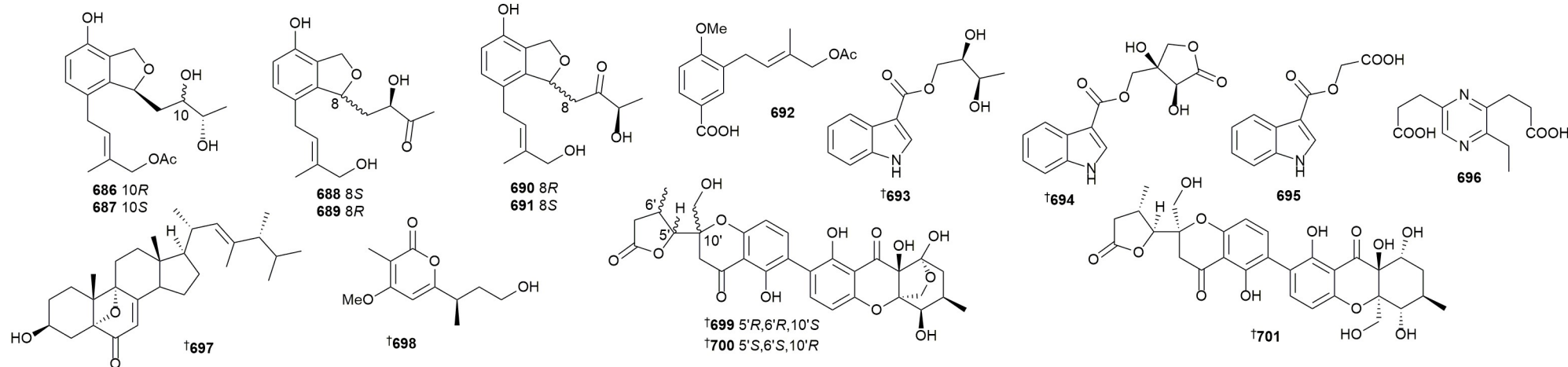
2.3 Marine-sourced fungi



- 253** Ascomycota *Penicillium sumatrense* // (rhizosphere *Bruguiera sexangular*) Hainan Island, P. R. China // Curvularin derivatives from the marine mangrove derived fungus *Penicillium sumatrense* MA-325
- 670 // N // sumalarin D // weak activ. vs 2 bact. strains; IA vs 4 HTCLs.
- 671 // N // sumalarin E // IA vs 2 bact. strains; IA vs 4 HTCLs.
- 672 // N // sumalarin F // NT.
- 673 // N // sumalarin G // NT.
- 254** Basidiomycota *Peniophora* sp. // (unspecified soft coral) Weizhou Island, Guangxi, Beihai, China) // Novel metabolites from the marine-derived fungus *Peniophora* sp. SCSIO41203 show promising *in vitro* antitumor activity as methuosis inducers in PC-3 cells
- 674 // N // peniotrinin A // IA vs 1 HTCL.
- 675 // N // peniotrinin B // IA vs 1 HTCL.
- 676 // N // peniotrinin C // IA vs 1 HTCL.
- 677 // N // peniotrinin D // IA vs 1 HTCL.
- 678 // N // peniotrinin E // IA vs 1 HTCL.
- 679 // N // peniotrinin F // IA vs 1 HTCL.
- 255** Ascomycota *Peroneutypa* sp. // (unspecified sea cucumber) Guarapari, Espírito Santo state, Brazil // Structure and biosynthesis of perochalasin A–C, open-chain merocytochalasins produced by the marine-derived fungus *Peroneutypa* sp. M16
- 680 // N // perochalasin A // NT.
- 681 // N // (+)-perochalasin B/epi-perochalasin B // IA vs 3 *P. falciparum* strains.
- 682 // N // (+)-perochalasin C/epi-perochalasin C // IA vs 3 *P. falciparum* strains.
- 256** Ascomycota *Pestalotiopsis* sp. // (sponge, *Chalinidae* sp.) Paracel Islands, Hainan, China // Pestanoid A, a rearranged pimarane diterpenoid osteoclastogenesis inhibitor from a marine mesophotic zone *Chalinidae* sponge-associated fungus, *Pestalotiopsis* sp. NBUF145
- 683 // N // pestanoid A // weak inhib. activation NF-κβ; weak inhib. 3 kinases.
- 684 // M // nodulisporenone A // weak inhib. activation NF-κβ; weak inhib. 3 kinases.
- 685 // M // nodulisporenone B // NT

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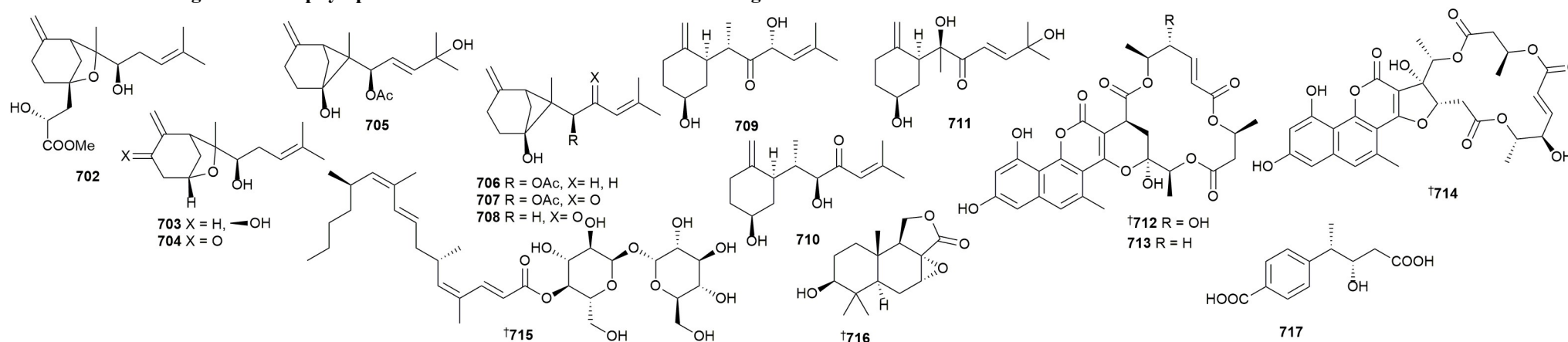
- 257** Ascomycota *Pestalotiopsis* sp. // (unspecified sponge) Weizhou Island, China // Pestalotiopols E–J, six new polyketide derivatives from a marine derived fungus *Pestalotiopsis* sp. SWMU-WZ04-1
686 // N // pestalotiopol E // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
687 // N // pestalotiopol F // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
688 // N // pestalotiopol G // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
689 // N // pestalotiopol H // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus.
690 // N // pestalotiopol I // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus; isol. as mixt with **691**.
691 // N // pestalotiopol J // IA vs 4 HTCLs; IA vs 3 bact. strains; IA vs 1 fungus; isol. as mixt with **690**.
- 258** Ascomycota *Phomopsis lithocarpus* // (sediment) Indian Ocean // A new secondary metabolite from the marine-derived fungus *Phomopsis lithocarpus* FS508
692 // N // 4-methoxy-3-[4-(acetyloxy)-3-methyl-2-butenyl]benzoic acid // IA vs 4 HTCLs; IA vs anti-inflam.
- 259** Ascomycota *Phomopsis tersa* // (sediment) Indian Ocean // 3-carboxy-indole derivatives from the deep-sea-derived fungus *Phomopsis tersa* FS441
693 // N // phomtersine A // IA vs 4 HTCLs; IA vs NO prod.
694 // N // phomtersine B // IA vs 4 HTCLs; IA vs NO prod.
695 // N // phomtersine C // IA vs 4 HTCLs; IA vs NO prod.
- 260** Ascomycota *Phomopsis asparagi*, Ascomycota *Phomopsis* sp. // (root, *Rhizophora mangle*) Dong Zhai Gang-Mangrove Garden, Hainan Island, China // Induction of three new secondary metabolites by the co-culture of endophytic fungi *Phomopsis asparagi* DHS-48 and *Phomopsis* sp. DHS-11 isolated from the Chinese mangrove plant *Rhizophora mangle*
696 // N // phomopyrazine // IA vs 2 HTCLs; IA vs immunosuppress.; IA vs AChE.
697 // N // phomosterol C // IA vs 2 HTCLs; IA vs immunosuppress.; IA vs AChE.
698 // N // phomopyrone E // IA vs 2 HTCLs; IA vs immunosuppress.; IA vs AChE.
- 261** Ascomycota *Phomopsis asparagi*, Ascomycota *Phomopsis* sp. // (roots, *Rhizophora mangle*) Dongzhaigang Mangrove Garden, Hainan Island, China // Metabolomics-guided discovery of new dimeric xanthones from co-cultures of mangrove endophytic fungi *Phomopsis asparagi* DHS-48 and *Phomopsis* sp. DHS-11
699 // N // phomoxanthone L // IA vs 2 HTCLs; IA vs immunosuppress.
700 // N // phomoxanthone M // IA vs 2 HTCLs; IA vs immunosuppress.
701 // N // phomoxanthone N // IA vs 2 HTCLs; IA vs immunosuppress.

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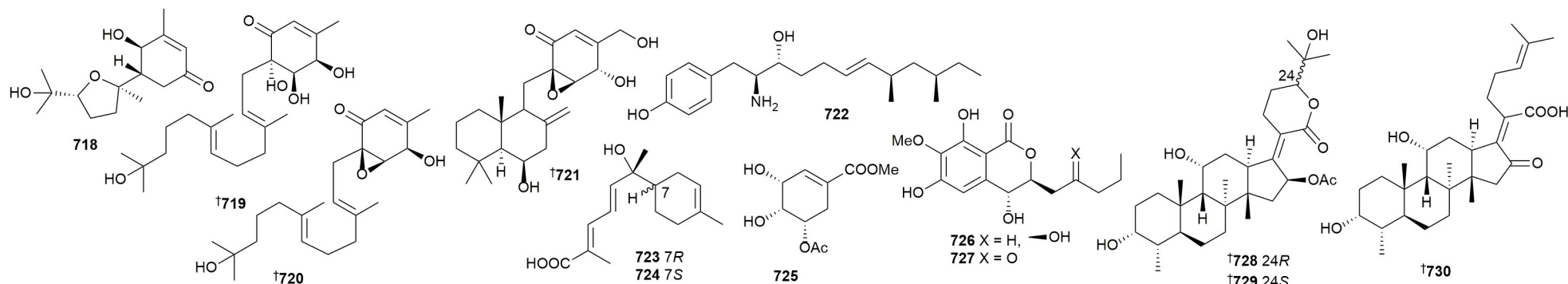


- 262** Ascomycota *Pseudallescheria boydii* // (sediment) South China Sea // Antifungal pseudoboyenes A–J, bergamotene-derived sesquiterpenoids from a cold-seep-derived *Pseudallescheria boydii*
702 // N // pseudoboyene A // IA to mod. activ. vs 11 fungal strains; IA to weak activ. vs 10 bact. strains; NT vs 20 HTCLs.
703 // N // pseudoboyene B // weak to mod. activ. vs 11 fungal strains; IA vs 10 bact. strains; NT vs 20 HTCLs.
704 // N // pseudoboyene C // weak to mod. activ. vs 11 fungal strains; IA vs 10 bact. strains; NT vs 20 HTCLs.
705 // N // pseudoboyene D // mod. to pot. activ. vs 11 fungal strains; IA vs 10 bact. strains; IA vs 20 HTCLs.
706 // N // pseudoboyene E // weak to mod. activ. vs 11 fungal strains; IA to mod. activ. vs 10 bact. strains; NT vs 20 HTCLs.
707 // N // pseudoboyene F // weak to mod. activ. vs 11 fungal strains; IA vs 10 bact. strains; NT vs 20 HTCLs.
708 // N // pseudoboyene G // weak to mod. activ. vs 11 fungal strains; IA to weak activ. vs 10 bact. strains; NT vs 20 HTCLs.
709 // N // pseudoboyene H // IA vs 11 fungal strains; IA to weak activ. vs 10 bact. strains; IA vs 20 HTCLs.
710 // N // pseudoboyene I // IA vs 11 fungal strains; IA to mod. activ. vs 10 bact. strains; NT vs 20 HTCLs.
711 // N // pseudoboyene J // IA vs 11 fungal strains; IA to weak activ. vs 10 bact. strains; NT vs 20 HTCLs.
- 263** Ascomycota *Pseudogymnoascus* sp. // (sediment) Fildes Peninsula, Antarctica // Discovery, total synthesis, and anti-inflammatory evaluation of naturally occurring naphthopyrone-macrolide hybrids as potent NLRP3 inflammasome inhibitors
712 // N // gymnoasin A // weak anti-inflam.; IA vs 12 HTCLs; IA vs 8 bact. strains; IA vs 1 virus strain.
713 // N // gymnoasin B // weak anti-inflam.; IA vs 12 HTCLs; IA vs 8 bact. strains; IA vs 1 virus strain.
714 // N // gymnoasin C // weak anti-inflam.; IA vs 12 HTCLs; IA vs 8 bact. strains; IA vs 1 virus strain.
- 264** Ascomycota *Pseudogymnoascus* sp. // (sediment) Antarctica // Synergistic inhibitions of Gram-negative bacteria by combination treatment with ciprofloxacin and a novel glucolipid
715 // N // pseudogymnoside // IA to weak activ. vs 5 bact. strains; weak adjuvant activ. vs 3 bact. strains.
- 265** Ascomycota *Pyrrhoderma noxium* // (sediment) South China Sea // Drimane-type sesquiterpenoids and their anti-inflammatory evaluation from *Pyrrhoderma noxium* HNNU0524
716 // N // pyrrnoxin A // IA vs NO prod.
717 // N // pyrrnoxin B // IA vs NO prod.

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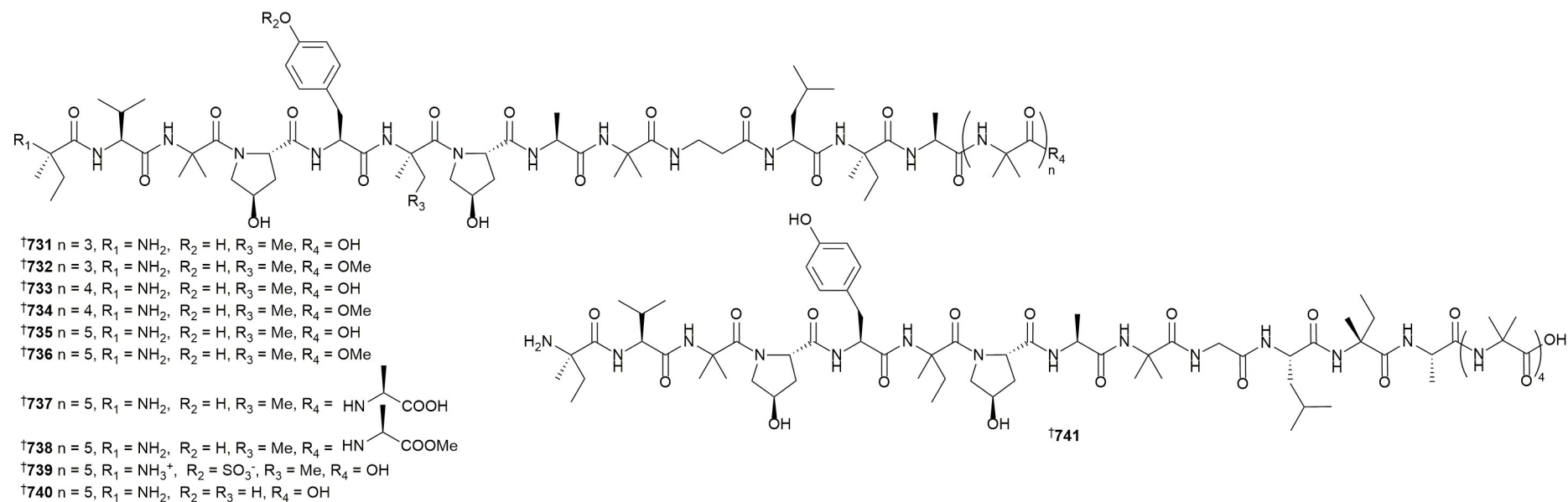
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- 266** Ascomycota *Retroconis fusiformis* // (sediment) Eastern Pacific // Retrobisabolane A, a novel bisabolane-derived sesquiterpenoid isolated from deep-sea-derived fungus *Retroconis fusiformis* MCCC 3A00792
718 // N // retrobisabolane A // IA vs 3 HTCLs.
- 267** Ascomycota *Sarocladium terricola* // (seawater) Western Pacific // Saromacrophorins A–C, rare sesquiterpene-hydroquinone hybrids from the deep-sea-derived fungus *Sarocladium terricola* 494 a
719 // N // saromacrophorin A // IA vs anti-allergy (food).
720 // N // saromacrophorin B // IA vs anti-allergy (food).
721 // N // saromacrophorin C // IA vs anti-allergy (food).
- 268** Ascomycota *Scedosporium apiospermum* // (sediment) Sagami Bay, Hatsushima Islands, Shizuoka, Japan // Antifungal profile against *Candida auris* clinical isolates of tyroscherin and its new analog produced by the deep-sea-derived fungal strain *Scedosporium apiospermum* FKJ-0499
722 // N // N-demethyltyroscherin // mod. to pot. activ. vs 22 fungal strains (all *Candida auris*).
- 269** Ascomycota *Roussoella* sp. // (mangrove sediment) Gaoqiao, Lianjiang, China // Two new sesquiterpenoids and a new shikimic acid metabolite from mangrove sediment-derived fungus *Roussoella* sp. SCSIO 41427
723 // N // elgonene M // IA vs 1 HTCL; IA vs anti-inflamm.
724 // N // elgonene N // IA vs 1 HTCL; IA vs anti-inflamm.
725 // N // methyl 5-O-acetyl-5-epi-shikimate // IA vs 1 HTCL; IA vs anti-inflamm.
- 270** Ascomycota *Setosphaeria* sp. // (sponge, *Callyspongia* sp.) Xuwen County, Guangdong Province, China // Two new isocoumarins isolated from the marine-sponge-derived fungus *Setosphaeria* sp. SCSIO41009
726 // N // exserolide L // weak activ. vs 1 virus strain; IA vs HMG-CoA.
727 // N // exserolide M // IA vs 1 virus strain; IA vs HMG-CoA.
- 271** Ascomycota *Simplicillium lamellicola* // (seawater) Dasan Korean Arctic Station, Ny-Alesund, Svalbard // New fusidane-type nortriterpenoids from the Arctic marine-derived fungus *Simplicillium lamellicola* culture medium with their inhibitory effect on benign prostatic hyperplasia
728 // N // simplifusinolide A // IA vs 2 NHCLs.
729 // N // 24-epi-simplifusinolide A // IA vs 2 NHCLs.
730 // N // simplifusidic acid L // IA vs 2 NHCLs.

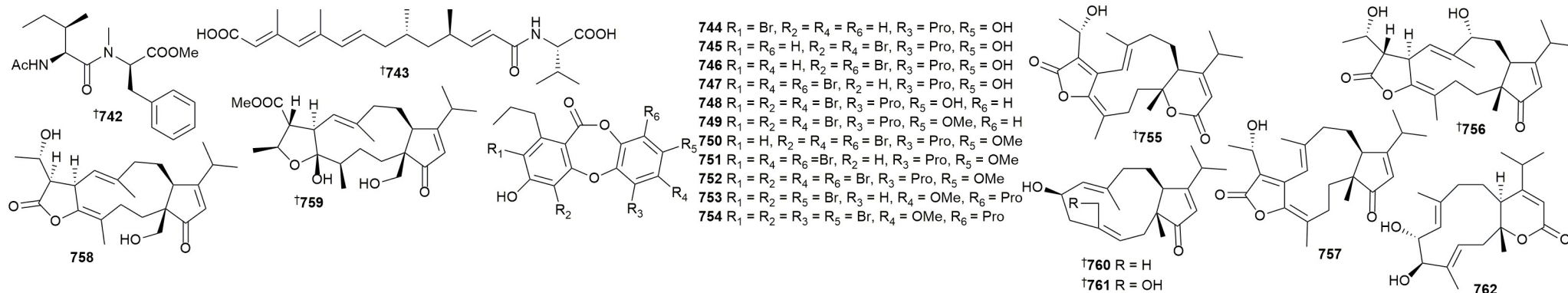
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- 272 Ascomycota *Simplicillium obclavatum* // (sediment) East Indian Ocean // New antibacterial peptaibiotics against plant and fish pathogens from the deep-sea-derived fungus *Simplicillium obclavatum* EIODSF 020
- 731 // N // simplicipeptaib A // IA vs 4 bact. strains.
 732 // N // simplicipeptaib B // IA to weak activ. vs 4 bact. strains.
 733 // N // simplicipeptaib C // IA to weak activ. vs 4 bact. strains.
 734 // N // simplicipeptaib D // IA to weak activ. vs 4 bact. strains.
 735 // N // simplicipeptaib E // IA to weak activ. vs 4 bact. strains.
 736 // N // simplicipeptaib F // IA to weak activ. vs 4 bact. strains.
 737 // N // simplicipeptaib G // IA to mod. activ. vs 4 bact. strains.
 738 // N // simplicipeptaib H // IA to weak activ. vs 4 bact. strains.
 739 // N // simplicipeptaib I // IA to mod. activ. vs 4 bact. strains.
 740 // N // simplicipeptaib J // IA vs 4 bact. strains.
 741 // N // simplicipeptaib K // IA to weak activ. vs 4 bact. strains.

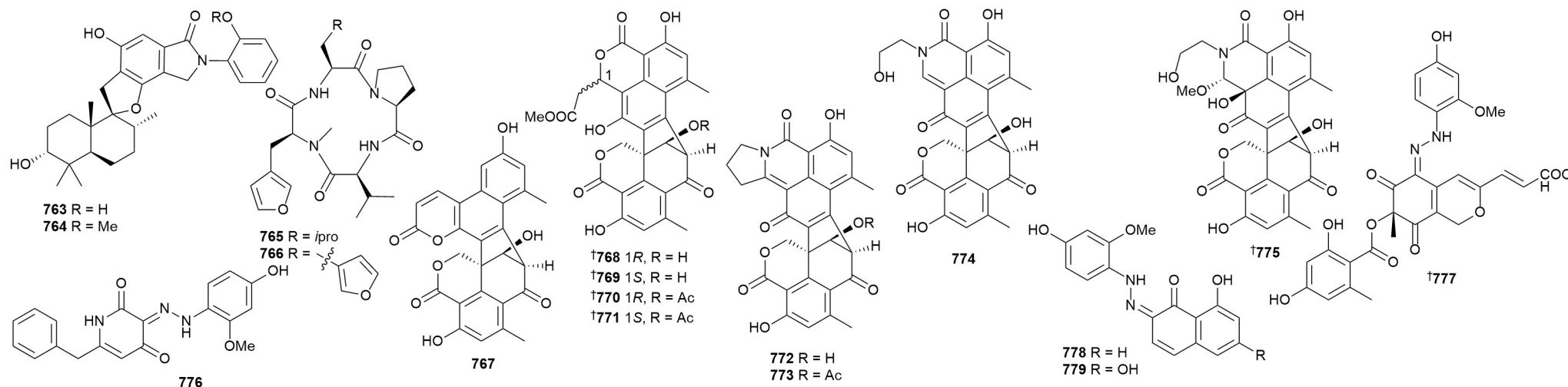
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- 273** Ascomycota *Simplicillium* sp. // (soft coral, *Sinularia* sp.) Yongxing Island, South China Sea // Sinulariapeptide F, a new peptide from culture broth of marine-derived fungus *Simplicillium* sp. SCSIO 41222
- 274** Ascomycota *Simplicillium lamellicola* // (sediment) Antarctic Weddell Sea // Evolution-based discovery of polyketide acylated valine from a cytochalasin-like gene cluster in *Simplicillium lamellicola* HDN13430
- 275** Ascomycota *Spiromastix* sp. // (sediment) South Atlantic Ocean // Brominated depsidones with antibacterial effects from a deep-sea-derived fungus *Spiromastix* sp.
- 276** Ascomycota *Stachybotrys chartarum* // (soft coral, *Sarcophyton subviride*) Xisha Island, China // Atranones and dolabellanes with cardiomyocyte protective activity against cold ischemic injury from a coral-associated fungus *Stachybotrys chartarum*

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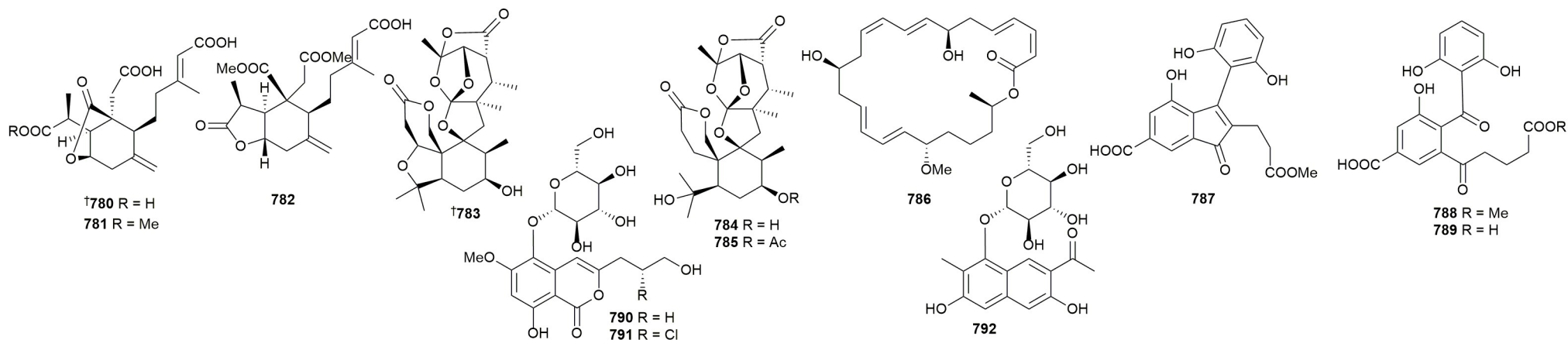
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- 277** Ascomycota *Stachybotrys* sp. // (sediment) Atlantic Ocean // Phenylspirodrimane with moderate reversal effect of multidrug resistance isolated from the deep-sea fungus *Stachybotrys* sp. 3A00409
763 // N // stachybotrin K // IA vs MDR-reversal.
764 // N // stachybotrin L // IA vs MDR-reversal.
- 278** Ascomycota *Stachylidium bicolor* // (sponge, *Callyspongia* sp.cf. *C. flammea*) Bare Island, New South Wales, Australia // A MassQL-integrated molecular networking approach for the discovery and substructure annotation of bioactive cyclic peptides
765 // N // endolide E // IA vs arginine vasopressin V_{1A} receptor.
766 // N // endolide F // IA vs arginine vasopressin V_{1A} receptor.
- 279** Ascomycota *Talaromyces adpressus* // (sediment) // Adpressins A–G: oligophenalenone dimers from *Talaromyces adpressus*
767 // N // adpressin A // IA vs immunosuppressive.
768 // N // adpressin B // IA vs immunosuppressiv.
769 // N // 1-*epi*-adpressin B // IA vs immunosuppressive.
770 // N // adpressin C // IA vs immunosuppressive.
771 // N // 1-*epi*-adpressin C // weak immunosuppressive.
772 // N // adpressin D // IA vs immunosuppressive.
773 // N // adpressin E // IA vs immunosuppressive.
774 // N // adpressin F // IA vs immunosuppressive.
775 // N // adpressin G // weak immunosuppressive.
- 280** Ascomycota *Talaromyces amestolkiae* // (sediment) South China Sea // Phenylhydrazone alkaloids from the deep-sea cold seep derived fungus *Talaromyces amestolkiae* HDN21-0307
776 // N // talarohydrazone A // IA to weak cytotox. vs 5 HTCLs; IA to weak activ. vs 7 bact. strains.
777 // N // talarohydrazone B // IA vs 5 HTCLs; IA vs 7 bact. strains.
778 // N // talarohydrazone C // IA vs 5 HTCLs; IA vs 7 bact. strains.
779 // N // talarohydrazone D // IA vs 5 HTCLs; IA vs 7 bact. strains.

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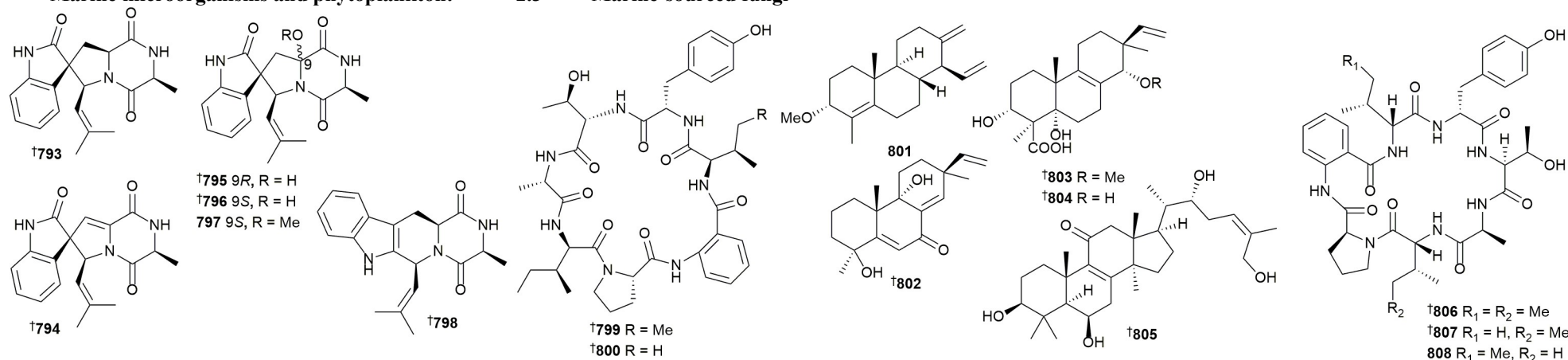
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- 281** Ascomycota *Talaromyces aurantiacus* // (sediment) South China Sea // Talaroterpenoids A–F: six new seco-terpenoids from the marine-derived fungus *Talaromyces aurantiacus*
- 780 // N // talaroterpenoid A // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 781 // N // talaroterpenoid B // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 782 // N // talaroterpenoid C // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 783 // N // talaroterpenoid D // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 784 // N // talaroterpenoid E // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 785 // N // talaroterpenoid F // IA vs 6 bact. strains; IA vs 4 fungal strains; IA vs NO prod.
- 282** Ascomycota *Talaromyces minioluteus* // (sediment) Pacific Ocean // Chemical constituents and chemotaxonomic research of the deep-sea-derived fungus *Talaromyces minioluteus* W19
- 786 // N // (7R,19S,2E,15E,17Z)-19-methoxy-15,17-dien-macrolactin A // NT.
- 283** Ascomycota *Talaromyces minnesotensis* // (sediment) Qinzhou Bay, Guangxi Province, China // New secondary metabolites from marine-derived fungus *Talaromyces minnesotensis* BTBU20220184
- 787 // N // talamitone A // IA vs 2 bact. strains; IA vs 1 fungus.
- 788 // N // talamitone B // IA vs 2 bact. strains; IA vs 1 fungus.
- 789 // N // demethyltalamitone B // IA vs 2 bact. strains; IA vs 1 fungus.
- 790 // N // talamiisocoumaringlycoside A // IA vs 2 bact. strains; IA vs 1 fungus.
- 791 // N // talamiisocoumaringlycoside B // IA vs 2 bact. strains; IA vs 1 fungus.
- 792 // N // talaminaphtholglycoside // IA vs 2 bact. strains; IA vs 1 fungus.

2 Marine microorganisms and phytoplankton:

2.3 Marine-sourced fungi

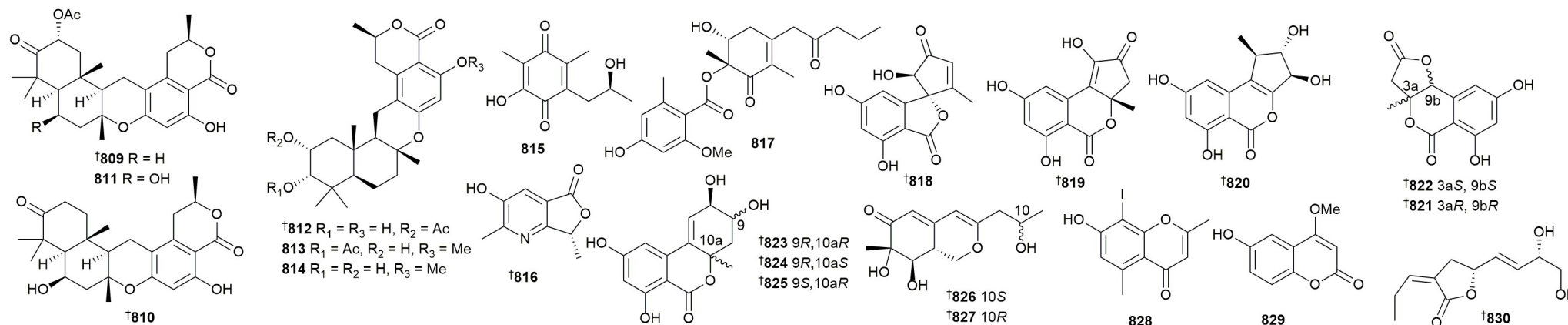


- 284** Ascomycota *Talaromyces purpureogenus* // (unspecified soft coral) Nansha Islands, China // Prenylated indole diketopiperazine alkaloids as phosphatase inhibitors from the marine-derived fungus *Talaromyces purpureogenus*
793 // N // talaromyine A // IA vs 2 HTCLs; IA vs 7 PTPs.
794 // N // talaromyine B // IA vs 2 HTCLs; IA vs 7 PTPs.
795 // N // talaromyine C // IA vs 2 HTCLs; IA vs 7 PTPs.
796 // N // talaromyine D // IA vs 2 HTCLs; IA vs 7 PTPs.
797 // N // talaromyine E // IA vs 2 HTCLs; IA vs 7 PTPs.
798 // N // talaromyine F // IA vs 2 HTCLs; IA vs 7 PTPs.
- 285** Ascomycota *Talaromyces scorteus* // (sea anemone, *Cerianthus* sp.) Magellan Seamounts // Secondary metabolites with fungicide potentials from the deep-sea seamount-derived fungus *Talaromyces scorteus* AS-242
799 // N // scortide A // IA to mod. activ. vs 6 bact. strains; IA to weak activ. vs 12 fungal strains.
800 // N // scortide B // IA to weak activ. vs 6 bact. strains; IA to pot. activ. vs 12 fungal strains.
801 // N // talascortene H // IA vs 6 bact. strains; IA to mod. activ. vs 12 fungal strains.
802 // N // talascortene I // IA to weak activ. vs 6 bact. strains; IA to pot. activ. vs 12 fungal strains.
803 // N // talascortene J // IA to mod. activ. vs 6 bact. strains; IA to mod. activ. vs 12 fungal strains.
804 // N // talascortene K // IA vs 6 bact. strains; IA to mod. activ. vs 12 fungal strains.
805 // N // talascortene L // NT.
- 286** Ascomycota *Talaromyces siglerae* // (unidentified sponge) Geoge-island // Talaromides A–C, bioactive cyclic heptapeptides from *Talaromyces siglerae* isolated from a marine sponge
806 // N // talaromide A // IA vs 1 HTCL; IA vs 8 bact. strains; IA vs NO prod; IA vs anti-inflam.; IA vs osteoclast differentiation.
807 // N // talaromide B // IA vs 1 HTCL; IA vs 8 bact. strains; IA vs NO prod; IA vs anti-inflam.; IA vs osteoclast differentiation.
808 // N // talaromide C // IA vs 1 HTCL; IA vs 8 bact. strains; IA vs NO prod; IA vs anti-inflam.; IA vs osteoclast differentiation.

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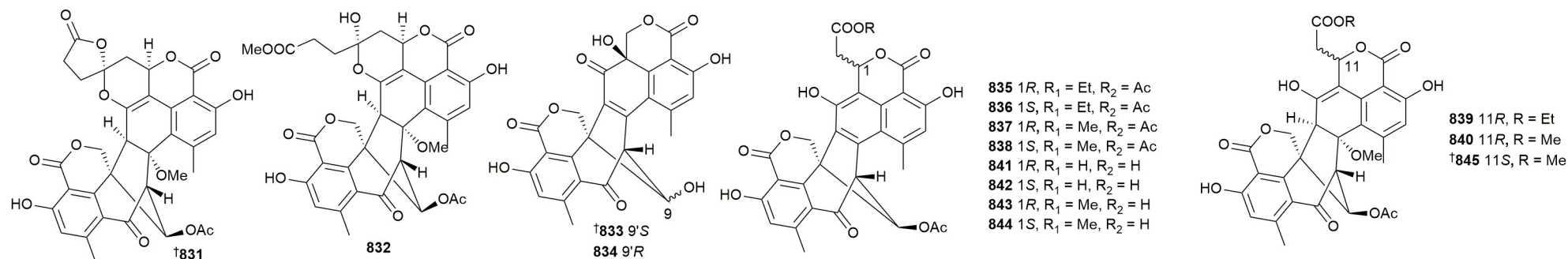


- 287** Ascomycota *Talaromyces variabilis* // (unspecified source) // Cytotoxic pentaketide-sesquiterpenes from the marine-derived fungus *Talaromyces variabilis* M22734
809 // N // (2R,7aR,9aR,12R,13aS,13bR)-5-hydroxy-2,7a,10,10,13a-pentamethyl-4,11-dioxo-1,7a,8,9,9a,10,11,12,13,13a,13b,14-dodecahydro-2H,4H-benzo[a]pyrano[3,4-j]xanthen-12-yl acetate // IA vs 4 HTCLs.
810 // N // (2R,7aR,9R,9aR,13aS,13bR)-5,9-dihydroxy-2,7a,10,10,13a-pentamethyl-1,8,9,9a,10,12,13,13a,13b,14-decahydro-2H,4H-benzo[a]pyrano[3,4-j]xanthene-4,11(7aH)-dione // IA vs 4 HTCLs.
811 // N // (2R,7aR,9R,9aR,12R,13aS,13bR)-5,9-dihydroxy-2,7a,10,10,13a-pentamethyl-4,11-dioxo-1,7a,8,9,9a,10,11,12,13,13a,13b,14-dodecahydro-2H,4H-benzo[a]pyrano[3,4-j]xanthen-12-yl acetate // IA vs 4 HTCLs.
288 Ascomycota *Talaromyces* sp. // (seawater) Dongshan Island, China // Cytotoxic and antibacterial meroterpenoids isolated from the marine-derived fungus *Talaromyces* sp. M27416
812 // N // taladrimanin B // IA vs 20 HTCLs; IA to weak activ. vs 6 bact. strains.
813 // N // taladrimanin C // IA vs 20 HTCLs; NT vs 6 bact. strains.
814 // N // taladrimanin D // IA vs 20 HTCLs; NT vs 6 bact. strains.
289 Ascomycota *Talaromyces* sp. // (seawater) Dongshan Island, Fujian Province, China // Benzoquinone and furopyridinone derivatives from the marine-derived fungus *Talaromyces* sp. MCCC 3A01752
815 // N // anserinone C // IA vs 1 HTCL; IA vs 4 bact. strains.
816 // N // (R)-3-hydroxy-2,7-dimethylfuro[3,4-b]pyridin-5(7H)-one // IA vs 1 HTCL; IA vs 4 bact. strains.
290 Ascomycota *Talaromyces* sp. // (sediment) Beaufort Sea, Alaska // A new ring-opened azaphilone from a fungus *Talaromyces* sp. FB15
817 // N // methyl-talarophilone // NT.
291 Ascomycota *Talaromyces* sp. // (unidentified bivalve mollusc) South China Sea // Antibacterial polyketides from the deep-sea cold-seep-derived fungus *Talaromyces* sp. CS-258
818 // N // (3R,5'R)-5-hydroxytalaroflavone // IA vs 11 bact. strains; IA vs 6 fungal strains.
819 // N // talaroisochromenol A // NT.
820 // N // talaroisochromenol B // IA vs 11 bact. strains; IA vs 6 fungal strains.
821 // N // (-)-talaroisochromenol C // IA vs 11 bact. strains; IA vs 6 fungal strains.
822 // N // (+)-talaroisochromenol C // IA vs 11 bact. strains; IA vs 6 fungal strains.
823 // N // (8R,9R,10aR)-5-hydroxyaltenuene // IA vs 11 bact. strains; IA vs 6 fungal strains.

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- 824 // N // (8*R*,9*R*,10*aS*)-5-hydroxyaltenuene // IA vs 11 bact. strains; IA vs 6 fungal strains.
- 825 // N // (8*R*,9*S*,10*aR*)-5-hydroxyaltenuene // IA vs 11 bact. strains; IA vs 6 fungal strains.
- 826 // N // nemanecin D // NT.
- 827 // N // nemanecin E // NT.
- 828 // N // 2,5-dimethy-8-iodochromone // NT.
- 829 // N // 6-hydroxy-4-methoxycoumarin // NT.
- 830 // N // talarofurolactone A // NT.

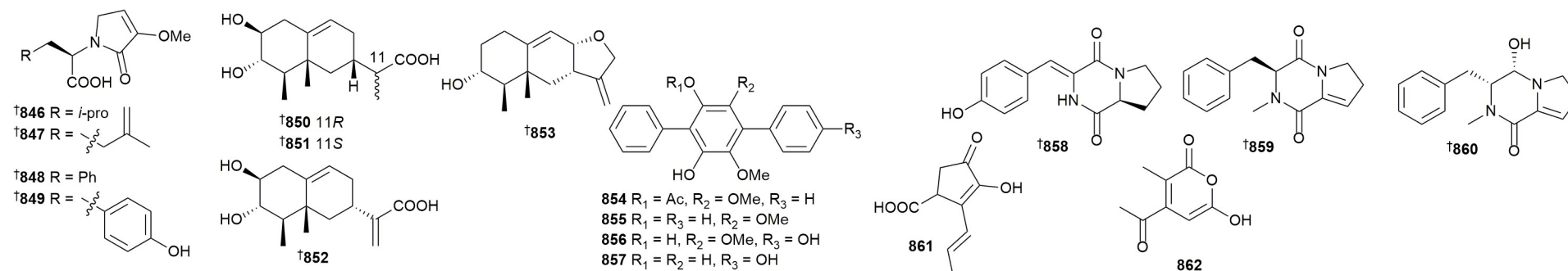


- 292 Ascomycota *Talaromyces* sp. // (coral, *Acanthastrea lordhowensis*) Xisha Island, China // Structurally diverse duclauxins from a coral-derived *Talaromyces* sp. and insight into determining the configuration at C-1 of heptacyclic duclauxins by 1H NMR
- 831 // N // taladuxin A // IA vs herbicidal activ.
- 832 // N // taladuxin B // IA vs herbicidal activ.
- 833 // N // taladuxin C // NT.
- 834 // N // taladuxin D // IA vs herbicidal activ.
- 835 // N // taladuxin E // NT.
- 836 // N // taladuxin F // NT.
- 837 // N // taladuxin G // IA vs herbicidal activ.
- 838 // N // taladuxin H // IA vs herbicidal activ.
- 839 // N // taladuxin I // IA vs herbicidal activ.
- 840 // N // taladuxin J // IA vs herbicidal activ.
- 841 // N // taladuxin K // IA vs herbicidal activ.
- 842 // N // taladuxin L // IA vs herbicidal activ.
- 843 // N // taladuxin M // IA vs herbicidal activ.
- 844 // N // taladuxin N // IA vs herbicidal activ.
- 845 // R // verruculosin B // IA vs herbicidal activ.

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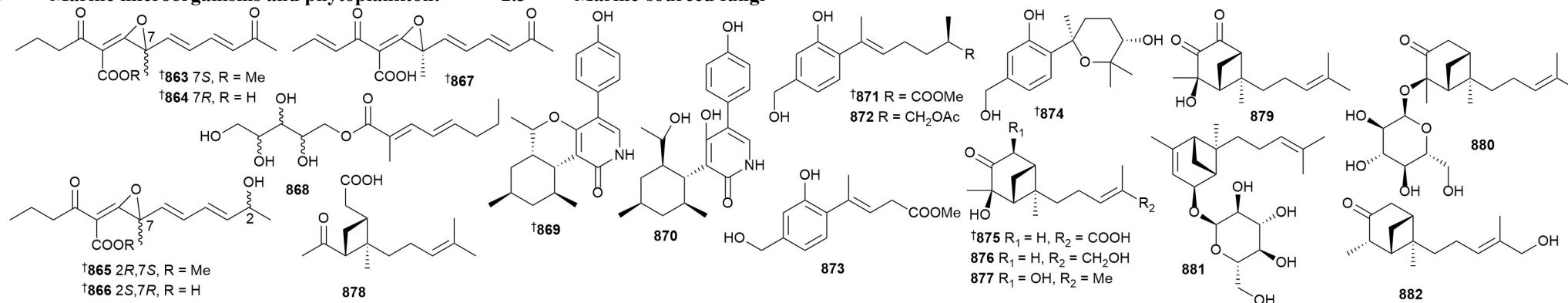


- 293** Ascomycota *Talaromyces hainanensis* // (mangrove sediment) Yalong Bay, Hainan Province, China // New cytotoxic γ -lactam alkaloids from the mangrove-derived fungus *Talaromyces hainanensis* sp. nov. guided by molecular networking strategy
 846 // N // talarolactam A // IA vs 4 bact strains; IA vs 3 HTCLs; IA vs α -glucosidase.
 847 // N // talarolactam B // IA vs 4 bact strains; IA vs 3 HTCLs; IA vs α -glucosidase.
 848 // N // talarolactam C // IA vs 4 bact strains; IA vs 3 HTCLs; IA vs α -glucosidase.
 849 // N // talarolactam D // IA vs 4 bact strains; IA vs 3 HTCLs; IA vs α -glucosidase.
- 294** Ascomycota *Talaromyces* sp. // (mangrove sediment) Gaoqiao Mangrove, Zhanjiang City, Guangdong Province, China // New sesquiterpenoids from the mangrove-derived fungus *Talaromyces* sp. as modulators of nuclear receptors
 850 // N // talaroterpene A // IA vs 9 nuclear recept.; IA vs 1 NMCL.
 851 // N // talaroterpene B // IA vs 9 nuclear recept.; IA vs 1 NMCL.
 852 // N // talaroterpene C // IA vs 9 nuclear recept.; IA vs 1 NMCL.
 853 // N // talaroterpene D // IA vs 9 nuclear recept.; IA vs 1 NMCL.
- 295** Ascomycota *Talaromyces* sp. // (mangrove sediment) Zhanjiang City, Guangdong Province, China // Discovery of oxidized p-terphenyls as phosphodiesterase 4 inhibitors from marine-derived fungi
 854 // N // talaroterphenyl A // IA vs PDE4; weak anti-fibrotic activ.
 855 // N // talaroterphenyl B // pot. inhib. PDE4.
 856 // N // talaroterphenyl C // pot. inhib. PDE4.
 857 // N // talaroterphenyl D // IA vs PDE4.
- 296** Ascomycota *Talaromyces* sp. // (mangrove sediment) Gaoqiao Mangrove, Zhanjiang // Three new dipeptide and two new polyketide derivatives from the mangrove-derived fungus *Talaromyces* sp.: antioxidant activity of two isolated substances
 858 // N // talaropolyketone A // IA vs 5 bact. strains; IA vs 3 fungal strains; IA vs PDE4 activ; IA vs antioxid.
 859 // N // talaropolyketone B // IA vs 5 bact. strains; IA vs 3 fungal strains; IA vs PDE4 activ; IA vs antioxid.
 860 // N // talaropolyketone C // IA vs 5 bact. strains; IA vs 3 fungal strains; IA vs PDE4 activ; IA vs antioxid.
 861 // N // talaropolyketone D // IA vs 5 bact. strains; IA vs 3 fungal strains; IA vs PDE4 activ; IA vs antioxid.
 862 // N // talaropolyketone E // IA vs 5 bact. strains; IA vs 3 fungal strains; IA vs PDE4 activ; IA vs antioxid.

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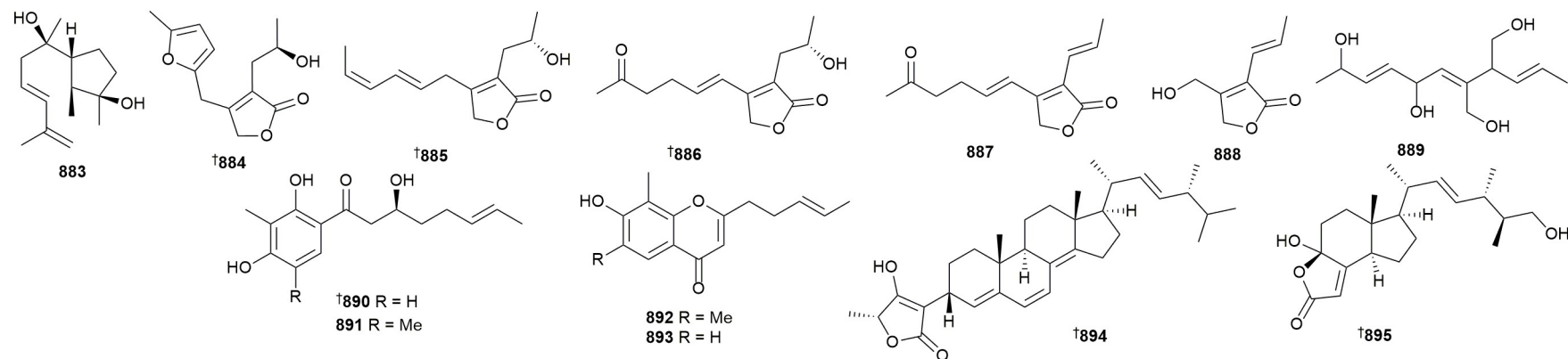
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- 297** Ascomycota *Talaromyces* sp. // (mangrove sediment) South China Sea // Talaketides A–G, linear polyketides with prostate cancer cytotoxic activity from the mangrove sediment-derived fungus *Talaromyces* sp. SCSIO 41027
863 // N // talaketide A // IA vs 2 HTCLs.
864 // N // talaketide B // IA vs 2 HTCLs.
865 // N // talaketide C // IA vs 2 HTCLs.
866 // N // talaketide D // IA vs 2 HTCLs.
867 // N // talaketide E // IA vs 2 HTCLs.
868 // N // talaketide F/G // IA vs 2 HTCLs.
- 298** Ascomycota *Tolypocladium cylindrosporum* // (sediment) Beaufort Sea, North Alaska // Tetramic acid-motif natural products from a marine fungus *Tolypocladium cylindrosporum* FB06 and their anti-Parkinson activities
869 // N // tolypyridone I // NT.
870 // N // tolypyridone J // NT.
- 299** Ascomycota *Trichoderma effusum* // (seawater) Bohai Sea // Anti-*Agrobacterium tumefactions* sesquiterpene derivatives from the marine-derived fungus *Trichoderma effusum*
871 // N // trichoderene A // mod. activ. vs 1 bact. strain.
872 // N // trichoderene B // weak. activ. vs 1 bact. strain.
873 // N // trichoderene C // weak. activ. vs 1 bact. strain.
874 // N // trichoderene D // IA vs 1 bact. strain.
- 300** Ascomycota *Trichoderma erinaceum* // (sea star, *Acanthaster planci*) Hainan Sanya National Coral Reef Reserve, China // Genome mining of the marine-derived fungus *Trichoderma erinaceum* F1-1 uncovers bergamotene-type sesquiterpenoids
875 // N // oxybergamotene A // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
876 // N // oxybergamotene B // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
877 // N // oxybergamotene C // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
878 // N // oxybergamotene D // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
879 // N // oxybergamotene E // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
880 // N // oxybergamotene F // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
881 // N // oxybergamotene G // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.
882 // N // oxybergamotene H // IA vs 2 HTCLs; IA vs 1 bact. strain; IA vs anti-inflam.

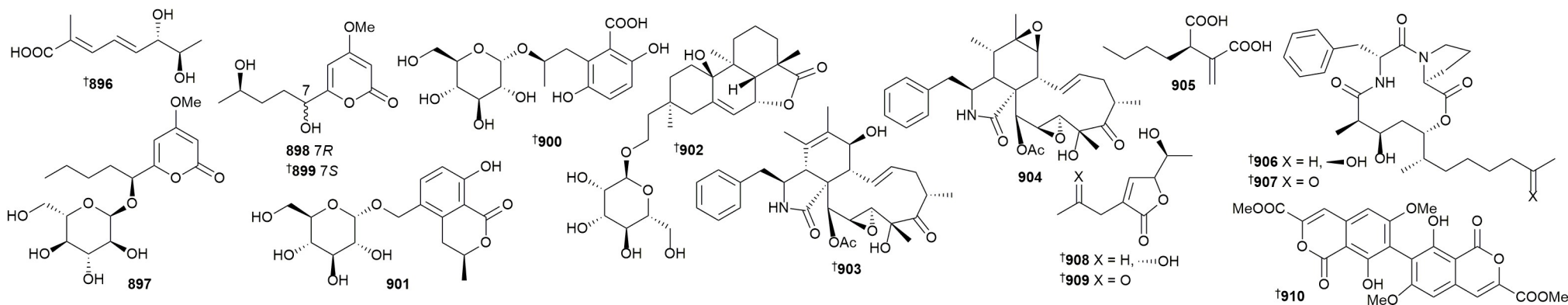
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- 301** Ascomycota *Trichoderma* sp. // (sediment) Weihai, China // 9,11-Cycloneren-3,7-diol: a new cyclonerane sesquiterpene from the marine-sediment-derived fungus *Trichoderma harzianum* WH-22
883 // N // 9,11-cycloneren-3,7-diol // IA vs 3 HTCLs.
- 302** Ascomycota *Trichoderma harzianum* // (sediment) Zhoushan, China // Harzianolides B–G: undescribed butenolides isolated from the fungus *Trichoderma harzianum* ZN-4
884 // N // harzianolide B // IA vs 2 HTCLs; IA to weak activ. vs 4 fungal strains.
885 // N // harzianolide C // IA vs 2 HTCLs; IA vs 4 fungal strains.
886 // N // harzianolide D // IA vs 2 HTCLs; IA vs 4 fungal strains.
887 // N // harzianolide E // IA vs 2 HTCLs; IA vs 4 fungal strains.
888 // N // harzianolide F // IA vs 2 HTCLs; IA vs 4 fungal strains.
889 // N // harzianolide G // IA vs 2 HTCLs; IA vs 4 fungal strains.
- 303** Ascomycota *Trichoderma* sp. // (fish, *Sebastes schlegelii*) Yangma Island, Yantai, China // Anti-inflammatory monomeric sorbicillinoids from the marine-fish-derived fungus *Trichoderma* sp. G13
890 // N // trichillinoid A // IA vs 4 HTCLs; IA vs 4 bact. strains; IA vs NO prod.
891 // N // trichillinoid B // IA vs 4 HTCLs; IA vs 4 bact. strains; IA vs NO prod.
892 // N // trichillinoid C // IA vs 4 HTCLs; IA vs 4 bact. strains; IA vs NO prod.
893 // N // trichillinoid D // IA vs 4 HTCLs; IA vs 4 bact. strains; IA vs NO prod.
- 304** Ascomycota *Trichoderma asperellum* // (mangrove seiment) Yangjiang, Guangdong Province, China // New steroids from mangrove-associated fungus *Trichoderma asperellum* SCNU-F0048
894 // N // ergosta-4,6,8(14),22-tetraen-3-(3'-methyl-4'-hydroxyl- γ -butenolide) // IA to weak cytotox. vs 6 HTCLs; pot. activ. vs 3 fungal strains.
895 // N // camphosterol B // IA vs 6 HTCLs; pot. activ. vs 3 fungal strains.

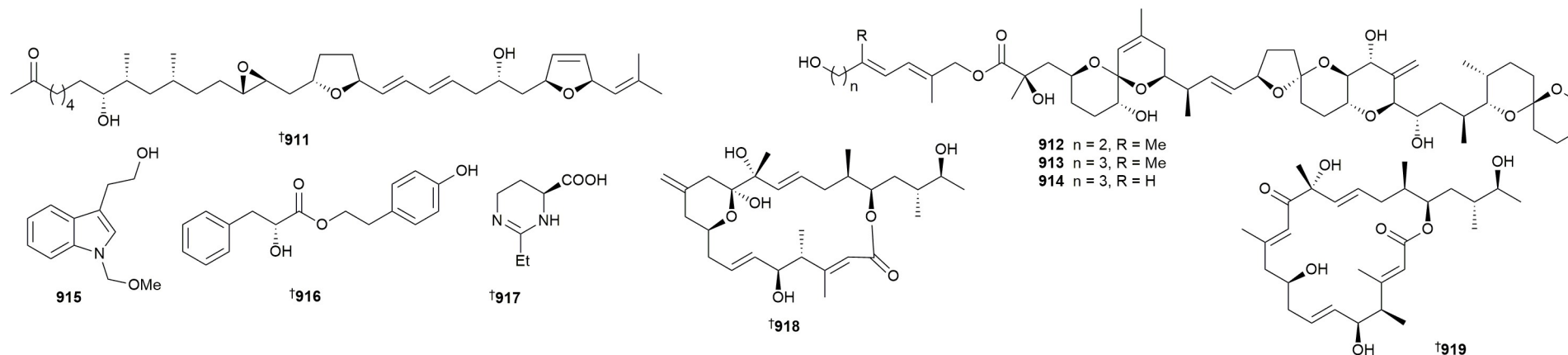
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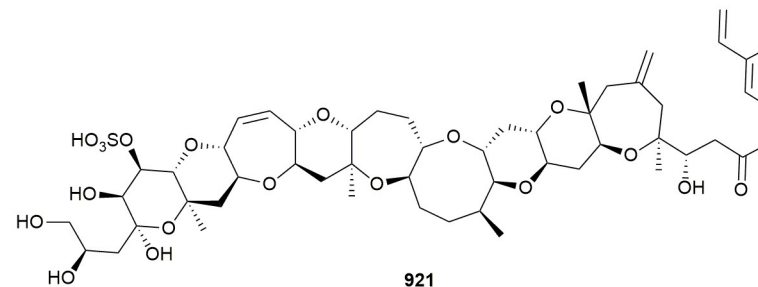
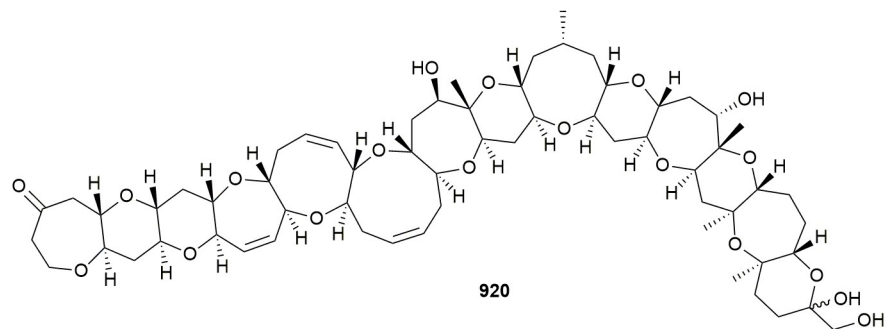
- 305** Ascomycota *Trichoderma harzianum* // (mangrove sediment) Zhanjiang, Guangdong province, China // Discovery of enzyme inhibitors from mangrove sediment derived fungus *Trichoderma harzianum* SCSIO 41051
896 // N // (6*S*,7*R*)-(2*E*,4*E*)-6,7-dihydroxy-2-methylocta-2,4-dienoic acid // IA vs 1 lipase
- 306** Ascomycota *Xylaria acuta* // (brown alga, *Sargassum cristaeifolium*) Badouzi, Keelung, Taiwan // Chemical constituents from a marine medicinal brown alga-derived *Xylaria acuta* SC1019
897 // N // xylarilactone A // IA vs anti-angiogenesis activ.; IA vs NO prod.
898 // N // xylarilactone B // IA vs anti-angiogenesis activ.; IA vs NO prod.
899 // N // xylarilactone C // IA vs anti-angiogenesis activ.; IA vs NO prod.
900 // N // *ent*-gedebic acid 8-*O*- α -D-glucopyranoside // IA vs anti-angiogenesis activ.; IA vs NO prod.
901 // N // 5*R*-hydroxymethylmellein 11-*O*- α -D-glucopyranoside // IA vs anti-angiogenesis activ.; IA vs NO prod.
902 // N // *ent*-hymatoxin E 16-*O*- α -D-mannopyranoside // IA vs anti-angiogenesis activ.; IA vs NO prod.
903 // N // 19,20-epoxycytochalasin S // mod. anti-angiogenesis activ.; IA vs NO prod.
904 // N // 19,20-epoxycytochalasin T // mod. anti-angiogenesis activ.; IA vs NO prod.
905 // N // (2*R*)-butylitaconic acid // IA vs anti-angiogenesis activ.; IA vs NO prod.
- 307** Ascomycota // * // Total syntheses and stereochemical assignment of acremolides A and B
906 // R // acremolide A // abs. config. assigned by total synth.
907 // R // acremolide B // abs. config. assigned by total synth.
- 308** Ascomycota // * // Asymmetric total syntheses of aspilactonol F and aspiketolactonol and synthetic studies toward diplofuranoxin
908 // R // aspilactonol F // abs. config. assigned by total synth.
909 // R // aspiketolactonol // abs. config. assigned by total synth.
- 313** Ascomycota // * // Total synthesis of bipenicilisorin and assignment of the absolute configuration
910 // R // bipenicilisorin // abs. config. assigned by total synth.

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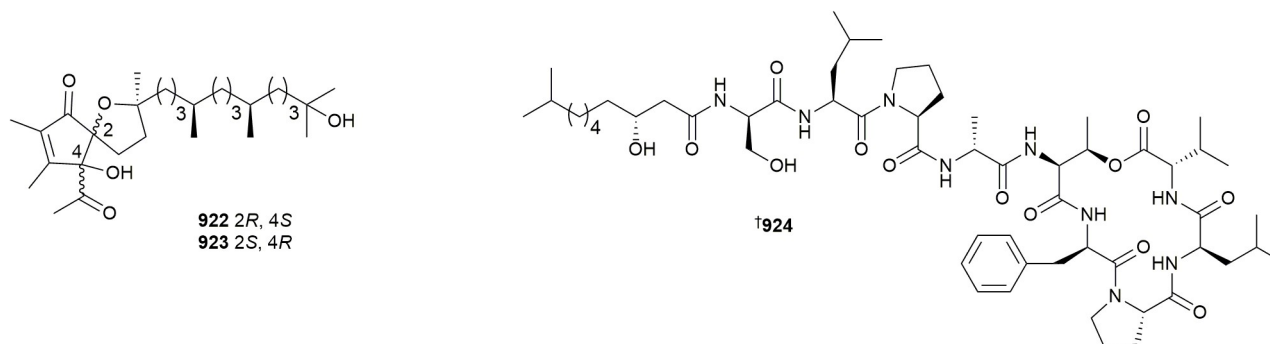
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- 333** Dinophyta *Prorocentrum lima* // Cultured // Prorocentin-5: a cytotoxic polyketide from the benthic marine dinoflagellate *Prorocentrum lima*
911 // N // prorocentin-5 // weak cytotox. vs 2 HTCLs; induces apoptosis via cell cycle arrest at S or G2/M phase.
- 334** Dinoflagellata *Prorocentrum lima* // Geomundo Island, Korea // Three new okadaic acid derivatives isolated from a benthic dinoflagellate *Prorocentrum lima*
912 // N // Okadaic acid (2*E*,4*E*)-2,5-dimethylhepta-2,4-diene-1,7-diol ester // NT.
913 // N // Okadaic acid (2*E*,4*E*)-2,5-dimetylocta-2,4-diene-1,8-diol ester // NT.
914 // N // Okadaic acid (2*E*,4*E*)-2-metylocta-2,4-diene-1,8-diol ester // NT.
- 335** Bigyra *Aurantiochytrium* sp. // Son Ca Island, Khanh Hoa, Vietnam // Chemical constituents from the heterotrophic marine microalgae *Aurantiochytrium* sp. SC145 and their antimicrobial activities
915 // N // *N*-methoxymethyltryptophol // IA vs 6 bact. strains; IA vs 1 fungus; potential artefact.
916 // N // (2*R*)-2-(4-hydroxyphenyl)ethyl 2-hydroxy-3-phenylpropanoate // IA vs 6 bact. strains; IA vs 1 fungus.
- 336** Dinoflagellata *Prorocentrum minimum*, Dinoflagellata *Alexandrium tamarense*, Dinoflagellata *Karenia brevis* // Cultured // 2-Homoectoine: an additional member of the ectoine family from phyto- and bacterioplankton involved in osmoadaptation
917 // M // 2-homoectoine // total synth. achieved; assists with osmoadaption.
- 341** Dinoflagellata // * // Iriomoteolide-1a and -1b: structure elucidation by integrating NMR spectroscopic analysis, theoretical calculation, and total synthesis
918 // R // iriomoteolide-1a // revised following extensive NMR, DFT analysis and total synth.
919 // R // iriomoteolide-1b // revised by total synth.

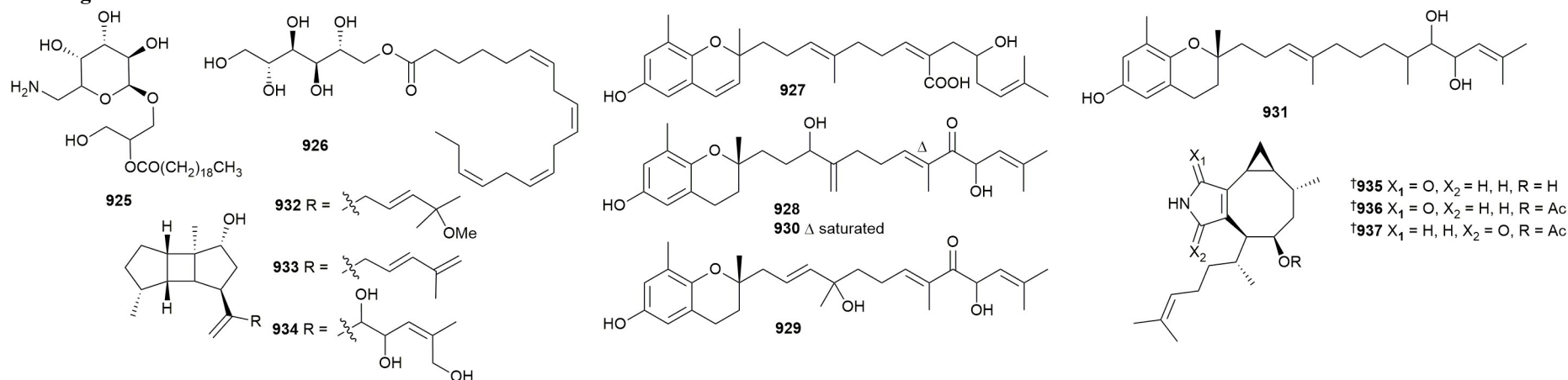


- 346** Dinoflagellata *Gambierdiscus silvae*, Heterokontophyta *Dictyota* sp // Cultured // Isolation of Caribbean ciguatoxin-5 (C-CTX5) and confirmation of its structure by NMR spectroscopy
920 // R // ciguatoxin-5 // revised by NMR analysis.
- 348** Dinoflagellata *Gambierdiscus australes* // // Investigation of 44-methylgambierone reactivity with periodate: structural reassignment, solvent instability and formation of a furanoid analogue
921 // R // 44-methylgambierone // revised by NMR analysis.



- 351** Chlorophyta *Caulerpa racemosa* // Xuwen County, Zhanjiang City, Guangdong Province, China // Caulerspiros A and B, a new pair of α -tocopheroid isomers from the green alga *Caulerpa racemosa* var. *turbinata*
922 // N // caulerspiro A // IA vs 6 bact. strains.
923 // N // caulerspiro B // IA vs 6 bact. strains.
- 352** Chlorophyta *Bryopsis* sp., Mollusca *Elysia* sp. // Suga-shima, Mie, Japan // Mebamamide C, a deoxy analogue of mebamamides in *Bryopsis* marine green algae and *Elysia* sacoglossan mollusks
924 // N // mebamamide C // NT; also det. in *Elysia marginata* mantle.

4 Brown algae

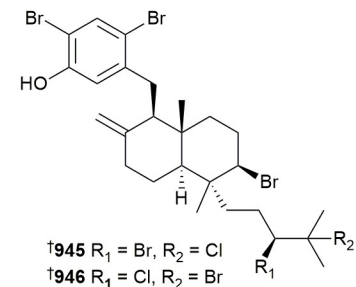
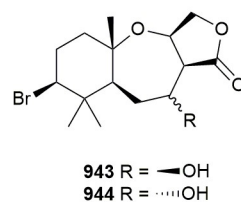
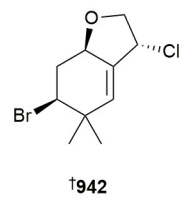
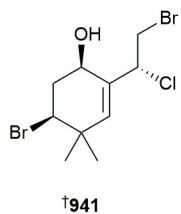


- 355** Ochrophyta *Sargassum* sp. // Fuzhou, China // Purification and screening of the antialgal activity of seaweed extracts and a new glycolipid derivative against two ichthyotoxic red tide microalgae *Amphidinium carterae* and *Karenia mikimotoi*
925 // N // 2-O-eicosanoyl-3-O-(6-amino-6-deoxy)-β-D-glucopyranosyl-glycerol // weak to mod. cytotox. vs 2 toxic dinoflagellate spp
- 356** Heterokontophyta *Hizikia fusiformis* // South Korea // Antibacterial and immunosuppressive effects of a novel marine brown alga-derived ester in atopic dermatitis
926 // N // (6Z,9Z,12Z,15Z)-(2R,3R,4R,5R)-2,3,4,5,6-pentahydroxyhexyl octadeca-6,9,12,15-tetraenoate // mod. to pot. anti-inflam. activ.
- 357** Heterokontophyta *Sargassum macrocarpum* // Jeju Island, South Korea // An undescribed anti-inflammatory meroterpenoid from the brown alga *Sargassum macrocarpum*
927 // N // macrocarquinoid J // IA vs RAW264.7; IA vs anti-inflam.
- 358** Heterokontophyta *Sargassum siliquastrum* // Changdao Island, Yantai, China // Five new chromane meroditerpenoids from the brown alga *Sargassum siliquastrum* of China Sea
928 // N // sargasilol J // IA vs 1 NMCL; IA vs NO prod.
929 // N // sargasilol K // IA vs 1 NMCL; IA vs NO prod.
930 // N // sargasilol L // IA vs 1 NMCL; weak inhib. NO prod.
931 // N // sargasilol M/N // IA vs 1 NMCL; IA vs NO prod.
- 359** Heterokontophyta *Stoechospermum marginatum* // Mandapam Coast, Thonithurai, Tamil Nadu, India // New cytotoxic spatane diterpenoids from marine alga *Stoechospermum marginatum*
932 // N // C₂₁H₃₄O₂ // weak cytotox. vs 4 HTCLs; IA vs 1 NMCL.
933 // N // C₂₀H₃₀O // weak cytotox. vs 4 HTCLs; IA vs 1 NMCL.
934 // N // C₂₀H₃₀O₄ // weak cytotox. vs 4 HTCLs; IA vs 1 NMCL.
- 360** Ochrophyta *Dictyota coriacea* // Nanji Island, Zhejiang Province, China // Coriaceumins A–D, the first nitrogen-containing crenulide diterpenoids from the brown alga *Dictyota coriacea* collected in the East China Sea
935 // N // coriaceumin A // IA vs 2 HTCLs; IA vs PTP1B.
936 // N // coriaceumin B // IA vs 2 HTCLs; IA vs PTP1B.
937 // N // coriaceumin C // IA vs 2 HTCLs; IA vs PTP1B.
938 // N // coriaceumin D // IA vs 2 HTCLs; IA vs PTP1B.
939 // A // dictyolactam C // IA vs 2 HTCLs; weak inhib. PTP1B; artefact.
940 // A // dictyolactam D // IA vs 2 HTCLs; IA vs PTP1B; artefact.

Key: Main article bibliography reference // Taxonomy // Location // Article title

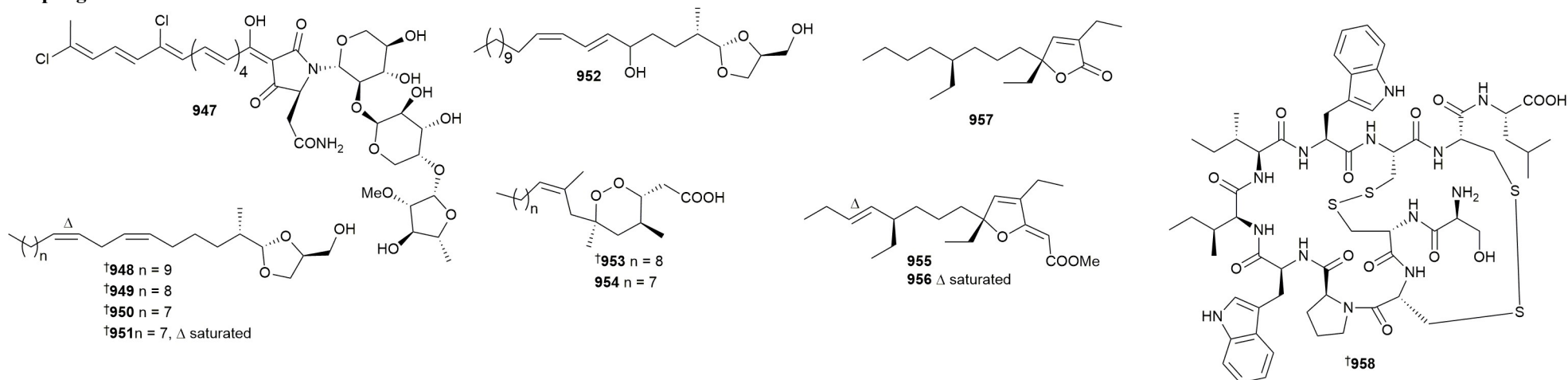
Compound number // Status // Compound name // Biological activity and Other information

5 Red algae



- 365** Rhodophyta *Portieria hornemannii* // Odo Beach, Okinawa, Japan // Halogenated cyclic monoterpenoids with anti-biofouling activity from the Okinawan red marine algae *Portieria Hornemannii*
941 // N // 2(R)-chloro-1,6(S)-dibromo-3(8)(Z)-octoden-4(R)-ol // Antifoul. activ. at 0.16 $\mu\text{mol.cm}^{-2}$.
942 // R // (2R,3(8)E,4R,6S)-6-bromo-2-chloro-1,4-oxido-3(8)-octodene // Antifoul. activ. at 0.16 $\mu\text{mol.cm}^{-2}$.
- 366** Rhodophyta *Palisada intermedia* // Ly Son island, Quang Ngai province, Vietnam // Two new halogenated sesquiterpene lactones from *Palisada intermedia*
943 // N // laurenolide A // IA vs 2 HTCLs.
944 // N // laurenolide B // IA vs 2 HTCLs.
- 373** Rhodophyta // * // Empirical chiroptical analyses of vicinal bromochloro natural products by van't Hoff's principle of optical superposition: assignment of the C-16 configurations of callophycols A and B
945 // R // callophycol A // revised using chiroptical methods.
946 // R // callophycol B // revised using chiroptical methods.

6 Sponges

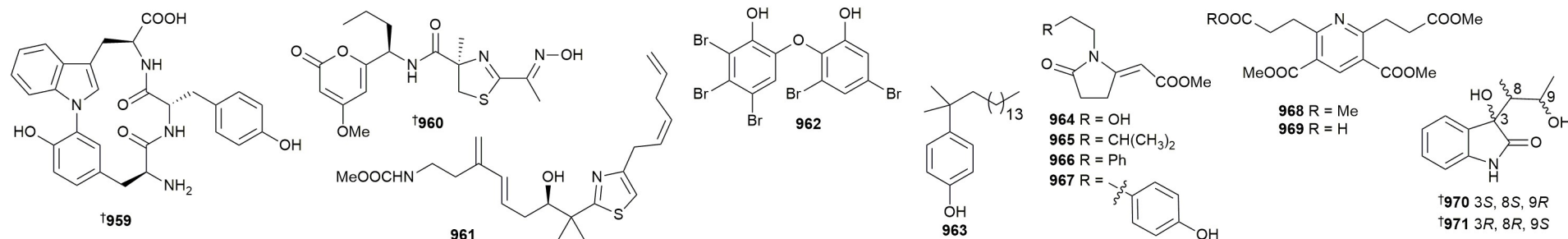


- 374** Porifera *Siliquariaspongia japonica* // Tsushima Island, Nagasaki, Japan // Aurantoside L, a new tetramic acid glycoside with anti-leishmanial activity isolated from the marine sponge *Siliquariaspongia japonica*
947 // N // aurantoside L // mod. activ. vs *Leishmania amazonensis*; IA vs *L. congolense*; weak cytotox. vs 2 HTCLs.
- 375** Porifera *Leucetta* sp. // Bohol province, Philippines // Structure determination of 1,3-dioxolane-containing lipids from the marine sponge *Leucetta* sp. using chiral ^1H NMR analysis of model systems
948 // N // $\text{C}_{24}\text{H}_{44}\text{O}_3$ // abs. config. of dioxolane ring det. using chiral shift reagents; IA vs 6 bact. strains.
949 // N // $\text{C}_{23}\text{H}_{42}\text{O}_3$ // abs. config. of dioxolane ring det. using chiral shift reagents; IA vs 6 bact. strains.
950 // N // $\text{C}_{22}\text{H}_{40}\text{O}_3$ // abs. config. of dioxolane ring det. using chiral shift reagents; IA vs 6 bact. strains.
951 // N // $\text{C}_{22}\text{H}_{42}\text{O}_3$ // abs. config. of dioxolane ring det. using chiral shift reagents; IA vs 6 bact. strains.
952 // N // $\text{C}_{24}\text{H}_{44}\text{O}_4$ // abs. config. of dioxolane ring det. using chiral shift reagents; IA vs 6 bact. strains.
- 376** Porifera *Plakinastrella* sp. // Palau // Structure elucidation, absolute configuration, and biological evaluation of cyclic peroxides from the sponge *Plakinastrella* sp.
953 // N // plakortide V // mod. to pot. cytotox. vs 3 HTCLs; NCI COMPARE analysis suggests glutathione peroxidase 4 as target
954 // N // plakortide W // mod. to pot. cytotox. vs 3 HTCLs; NCI COMPARE analysis suggests glutathione peroxidase 4 as target
- 377** Porifera *Plakortis halichondrioides* // Mona Island, Puerto Rico // Two gracilioethers containing a [2(5*H*)-furanlydene]ethanoate moiety and 9,10-dihydroplakortone G: new polyketides from the Caribbean marine sponge *Plakortis halichondrioides*
955 // N // gracilioether M // IA vs 1 HTCL; IA vs *Plasmodium berghei*.
956 // N // 11,12-dihydrogracilioether M // IA vs 1 HTCL; IA vs *Plasmodium berghei*.
957 // N // 9,10-dihydroplakortone G // IA vs 1 HTCL; IA vs *Plasmodium berghei*; isol. as mixture.
- 378** Porifera *Halichondria bowerbanki* // Coal Oil Point, Santa Barbara, California, USA // Discovery and folding dynamics of a fused bicyclic cysteine knot undecapeptide from the marine sponge *Halichondria bowerbanki*
958 // N // halichondamide A // IA vs 3 HTCLs and 1 NMCL; mol. dynamics probed biosynthesis of disulfide links.

Key: Main article bibliography reference // Taxonomy // Location // Article title

Compound number // Status // Compound name // Biological activity and Other information

6 Sponges

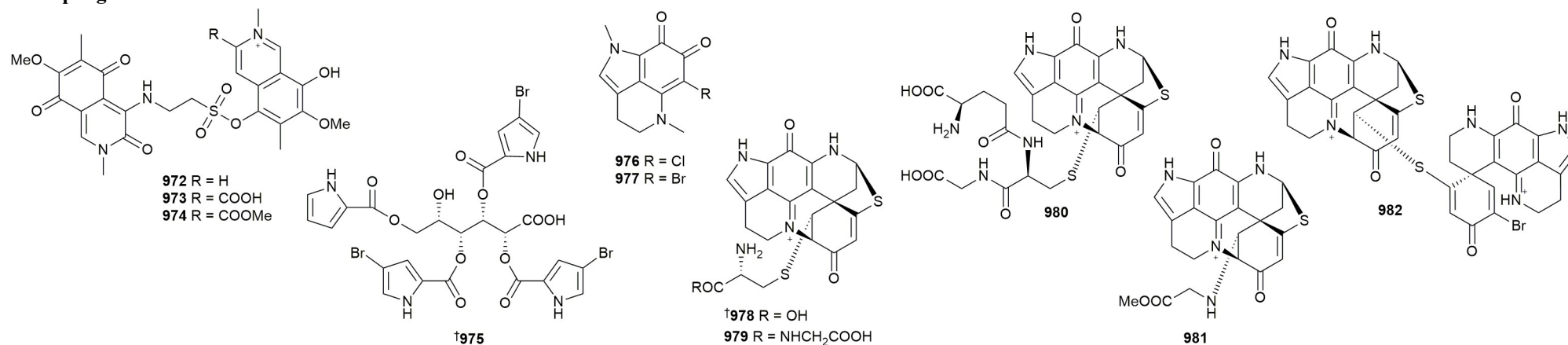


- 379** Porifera *Neopetrosia* sp // Mantehage Island, Indonesia // Neopetromin, a cyclic tripeptide with a C–N cross-link, from the marine sponge *Neopetrosia* sp., that causes vacuole fragmentation in tobacco BY-2 Cells
959 // N // neopetromin // IA vs 2 bact. strains; IA vs 1 fungus; IA vs 2 HTCLs; IA vs various enzymes; stimulates vacuole fragmentation in actin-independent manner; has rare C-N biaryl link.
- 380** Porifera *Discodermia* sp. // Halmahera, Indonesia // From sea sponge to clinical trials: starting the journey of the novel compound PM742
960 // N // PM742 // pot. cytotox. vs 8 HTCLs; synth. analogue in clinical trials.
- 382** Porifera *Cacospongia mycofijiensis* // Vanuatu // Further probing the properties of a unique sponge-derived alkaloid through the isolation of a new (–)-(5*E*)-(8*R*)-(14*Z*)-mycothiazole analogue
961 // N // (–)-(5*E*)-(8*R*)-(14*Z*)-mycothiazole // pot. cytotox. vs 2 HTCLs; treated *Caenorhabditis elegans* exhibited extended lifespans
- 383** Porifera *Lendenfeldia chondrodes* // Mayotte // Polybrominated diphenyl ethers isolated from the marine sponge *Lendenfeldia chondrodes* collected in Mayotte
962 // N // 3,5-dibromo-2-(3',4',5'-tribromo-2'-hydroxyphenoxy)phenol // weak inhib. CDK7 kinase.
- 384** Porifera *Hemimyscale* sp. // Ahia Reefs, Hurghada, Egypt // anti-leishmanial and cytotoxic compounds isolated from marine sponge *Hemimyscale* sp.
963 // N // 1-(2'-methyl heptadecyl) phenol // IA vs 1 HTCL; AI vs leishmania.
- 385** Porifera *Pseudospongosorites suberitoides* // Xisha Island, China // Suberitolactams A–D and suberitopyridines A–B: new γ-lactam and pyridine alkaloids isolated from the South China Sea sponge *Pseudospongosorites suberitoides*
964 // N // suberitolactam A // IA vs 1 virus strain; likely artefact of isol. with MeOH.
965 // N // suberitolactam B // IA vs 1 virus strain; likely artefact of isol. with MeOH.
966 // N // suberitolactam C // IA vs 1 virus strain; likely artefact of isol. with MeOH.
967 // N // suberitolactam D // IA vs 1 virus strain; likely artefact of isol. with MeOH.
968 // N // suberitopyridine A // IA vs 1 virus strain; likely artefact of isol. with MeOH.
969 // N // suberitopyridine B // IA vs 1 virus strain; likely artefact of isol. with MeOH.
- 386** Porifera *Tedania* sp. // Zhanjiang, Guangdong Province, China // (+)- and (–)-Tedanine, a pair of new enantiomeric indolone alkaloids from the marine sponge *Tedania* sp.
970 // N // (–)-tedanine // IA vs 1 HTCL; IA vs 1 bact. strain.
971 // N // (+)-tedanine // IA vs 1 HTCL; IA vs 1 bact. strain.

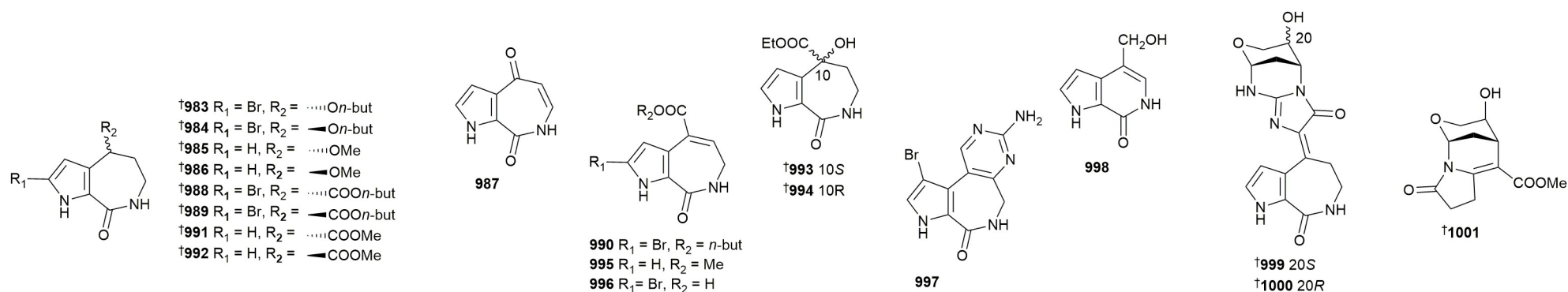
Key: Main article bibliography reference // Taxonomy // Location // Article title

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- 387** Porifera *Neopetrosia* sp. // Helen Reef, Southwest Islands, Palau // Neopetrotaurines A–C, isoquinoline alkaloids with an unprecedented taurine bridge from the sponge *Neopetrosia* sp
972 // N // neopetrotaurine A // weak suppressor PAX3-FOXO1 driven transcription.
973 // N // neopetrotaurine B // weak suppressor PAX3-FOXO1 driven transcription.
974 // N // neopetrotaurine C // weak suppressor PAX3-FOXO1 driven transcription; possible artefact.
- 388** Porifera *Lissodendoryx papillosa* // Dredge (145 m), Urup Island, Russia // Stonikacidin A, an antimicrobial 4-bromopyrrole alkaloid containing L-idonic acid core from the northwestern Pacific marine sponge *Lissodendoryx papillosa*
975 // N // stonikacidin A // IA vs 5 NMCLs and 7 HTCLs; weak activ. vs 1 of 3 bact. strains; weak activ. vs biofilm formation.
- 389** Porifera *Latrunculia* sp. // Dredge (95 m), Point D Entrecasteaux, Western Australia // Semisynthetic studies establish a role for conjugate halide exchange in the formation of chlorinated pyrroloiminoquinones and related alkaloids
976 // M // 6-chlorodamirone A // NT; total synth. also achieved.
977 // N // 6-bromodamirone A // NT; total synth. also achieved; converts to **976** when exposed to Cl⁻
- 390** Porifera *Latrunculia kaakaariki*, Porifera *Latrunculia brevis* // Northland, New Zealand // New discorhabdin D analogues from *Latrunculia* spp. sponges
978 // N // (–)-(1*R*,2*R*,6*R*,8*S*,3'*R*)-1-cysteinediscorhabdin D // IA vs NCI 60 CL.
979 // N // (–)-(1*R*,2*R*,6*R*,8*S*,3'*R*)-1-cysteineglycinediscorhabdin D // IA vs NCI 60 CL.
980 // N // (–)-(1*R*,2*R*,6*R*,8*S*,3'*R*,8'*R*)-1-glutathionediscorhabdin D // IA vs NCI 60 CL.
981 // N // (–)-(1*R*,2*S*,6*R*,8*S*)-discorhabdin N methyl ester // weak cytotox. vs NCI 60 CL.
982 // N // (+)-(1*R*,2*R*,6*R*,8*S*,6'*S*)-7,8-dihydrodiscorhabdin B dimer // weak cytotox. vs NCI 60 CL.



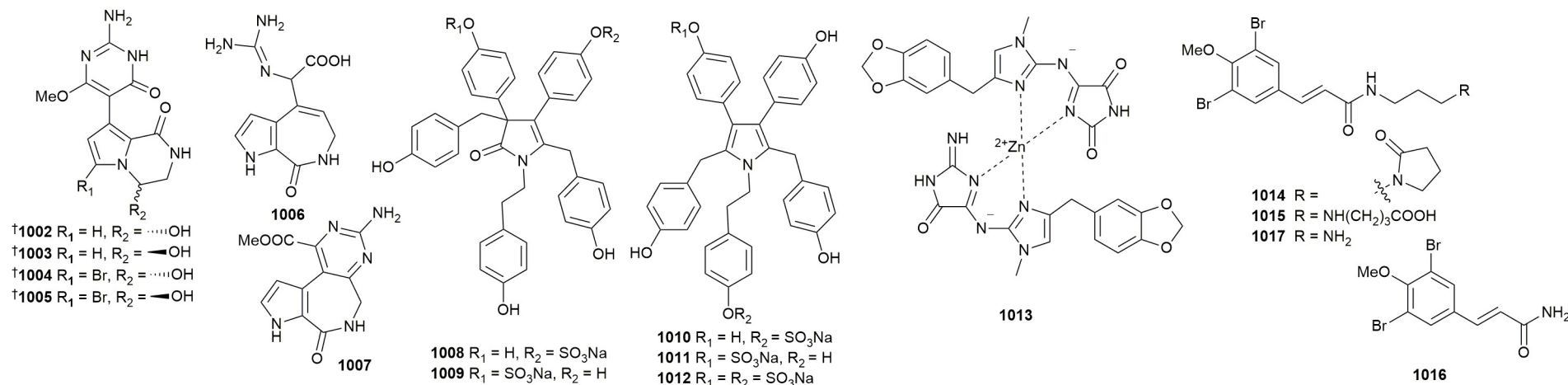
391 Porifera *Phakellia fusca* // Yongxing Island, China // Pyrrololactam alkaloids with IL-6 inhibitory activities from the sponge *Phakellia fusca* collected in the South China Sea

- 983** // N // (+)-phakine A // IA vs NMCL.
984 // N // (–)-phakine A // IA vs NMCL.
985 // N // (+)-phakine B // IA vs NMCL.
986 // N // (–)-phakine B // IA vs NMCL.
987 // N // phakine C // IA vs NMCL.
988 // N // (+)-phakine D // IA vs NMCL.
989 // N // (–)-phakine D // IA vs NMCL.
990 // N // phakine E // IA vs NMCL.
991 // N // (+)-phakine F // IA vs NMCL.
992 // N // (–)-phakine F // IA vs NMCL.
993 // N // (+)-phakine G // IA vs NMCL.
994 // N // (–)-phakine G // IA vs NMCL.
995 // N // phakine H // IA vs NMCL.
996 // N // phakine I // IA vs NMCL.
997 // N // phakine J // IA vs NMCL.
998 // N // phakine K // IA vs NMCL.

392 Porifera *Stylissa massa*, Porifera *Pseudospongosorites suberitoides* // Xisha Islands, China // Tagpyrrollins A and B and tagpyrrollidone A: three pyrrole steroid analogues with AKR1B1-targeting inhibitory activity from the sponges *Stylissa massa* and *Pseudospongosorites suberitoides*

- 999** // N // tagpyrrollin A // weak inhib. aldose reductase AKR1B1.
1000 // N // tagpyrrollin B // IA vs aldose reductase AKR1B1.
1001 // N // tagpyrrollidone A // IA vs aldose reductase AKR1B1.

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- 393** Porifera *Stylissa massa* // Xisha Islands, China // Discovery of anti-inflammatory alkaloids from sponge *Stylissa massa* suggests new biosynthetic pathways for pyrrole–imidazole alkaloids
1002 // N // (9*S*)-stylissamine A // IA vs aldose reductase; weak inhib. CuSO₄-induced macrophage migration.
1003 // N // (9*R*)-stylissamine A // IA vs aldose reductase; weak inhib. CuSO₄-induced macrophage migration.
1004 // N // (9*S*)-stylissamine B // IA vs aldose reductase; weak inhib. CuSO₄-induced macrophage migration.
1005 // N // (9*R*)-stylissamine B // IA vs aldose reductase; weak inhib. CuSO₄-induced macrophage migration.
1006 // N // C₁₁H₁₃N₅O₃ // IA vs aldose reductase; isol. as rac.
1007 // N // C₁₂H₁₁N₅O₃ // IA vs aldose reductase.
- 394** Porifera *Dictyodendrilla* cf. *dendyi* // Tauranga Harbour, New Zealand // Denigrins H–L: sulfated derivatives of denigrins D and E from a New Zealand *Dictyodendrilla* c.f. *dendyi* marine sponge
1008 // N // denigrin H // IA vs 1 HTCL; isol. as rac.
1009 // N // denigrin I // IA vs 1 HTCL; isol. as rac.
1010 // N // denigrin J // IA vs 1 HTCL.
1011 // N // denigrin K // IA vs 1 HTCL; underwent oxidative rearrangement in NMR tube
1012 // N // denigrin L // IA vs 1 HTCL.
- 395** Porifera *Pericharax heteroraphis* // Wallis Is. Lagoon, Wallis and Futuna Is. // Chemical investigation of the calcareous marine sponge *Pericharax heteroraphis*, clathridine-A related derivatives isolation, synthesis and osteogenic activity
1013 // N // [clathridine - clathridimine]-Zn²⁺ complex // IA vs endochondral differentiation; total synth. achieved.
- 396** Porifera *Suberea ianthelliformis* // Manta Ray Bommie, North Stradbroke Is., Australia // Discovery of ianthelliformisamines D–G from the sponge *Suberea ianthelliformis* and the total synthesis of ianthelliformisamine D
1014 // N // ianthelliformisamine D // IA vs biofilm formation; total synth. achieved.
1015 // N // ianthelliformisamine E // IA vs biofilm formation.
1016 // N // ianthelliformisamine F // IA vs biofilm formation; commercially available.
1017 // N // ianthelliformisamine G // IA vs biofilm formation; commercially available.

Key: Main article bibliography reference // Taxonomy // Location // Article title

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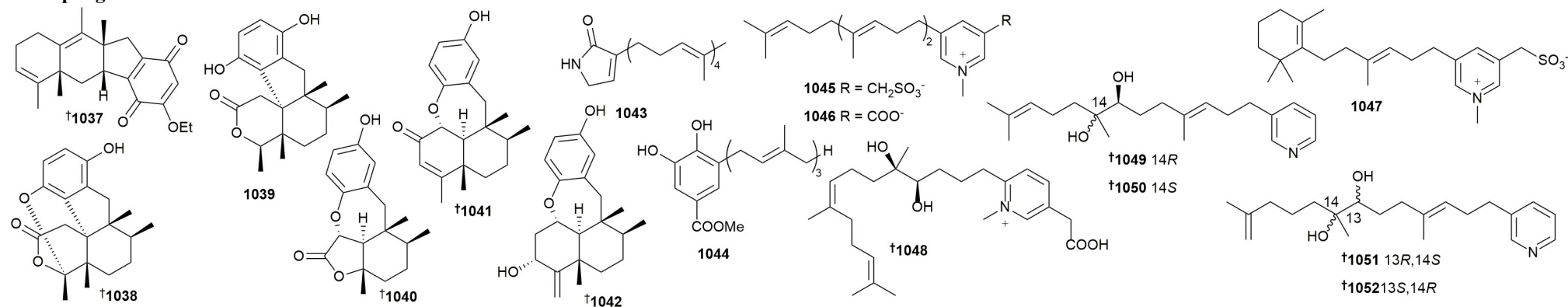
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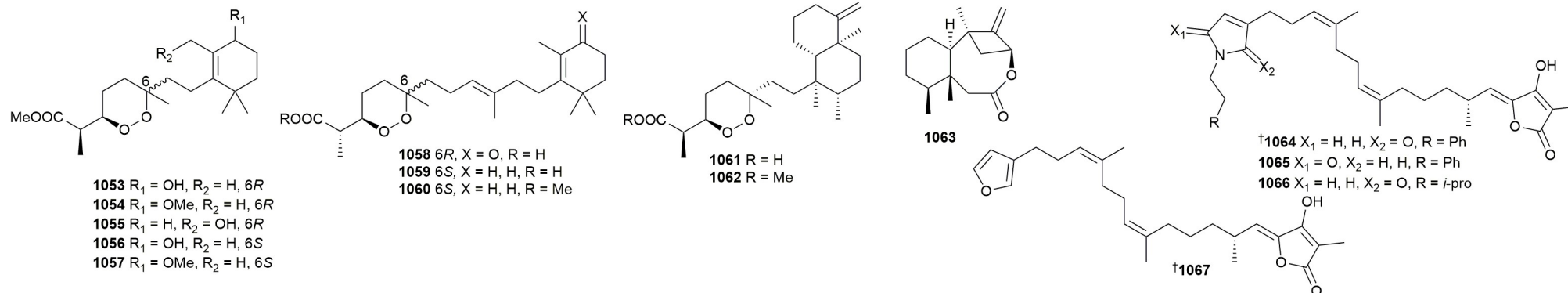
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6 Sponges



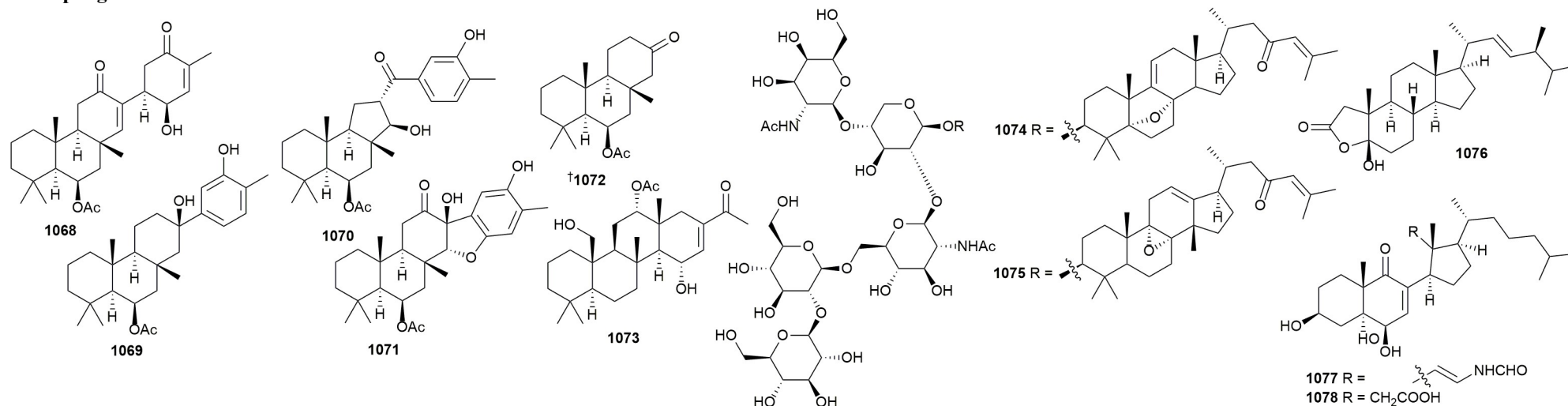
- 400** Porifera *Dysidea arenaria* // Xisha Islands, South China Sea // Arenarialins A–F, anti-inflammatory meroterpenoids with rearranged skeletons from the marine sponge *Dysidea arenaria*
1037 // N // arenarialin A // IA vs RAW264.7; weak inhib. TNF- α ; possible artefact.
1038 // N // arenarialin B // IA vs RAW264.7; weak inhib. TNF- α .
1039 // N // arenarialin C // IA vs RAW264.7; IA vs TNF- α .
1040 // N // arenarialin D // IA vs RAW264.7; mod. inhib. TNF- α ; mod. inhib. IL-6 prod.; down regulates NF- κ B p65 expression; down regulates ERK1/2, p38 and JNK phosphorylation.
1041 // N // arenarialin E // IA vs RAW264.7; mod. inhib. TNF- α ; mod. inhib. IL-6 prod.
1042 // N // arenarialin F // IA vs RAW264.7; mod. inhib. TNF- α ; mod. inhib. IL-6 prod.
- 401** Porifera *Hyrtios* sp. // Yongxing Island, China // Meroterpenoids from marine sponge *Hyrtios* sp. and their anticancer activity against human colorectal cancer cells
1043 // N // hyrtamide A // IA vs 1 HTCL.
1044 // N // hyrfarnediol A // IA vs 1 HTCL.
- 402** Porifera *Hippospongia lachne* // Xisha Islands, China // Isolation and absolute configuration of alkylpyridine alkaloids from the marine sponge *Hippospongia lachne*
1045 // N // hippospondine A // IA vs 3 HTCLs and 2 NMCLs.
1046 // N // hippospondine B // IA vs 3 HTCLs and 2 NMCLs.
1047 // N // hippospondine C // IA vs 3 HTCLs and 2 NMCLs.
1048 // N // hippospondine D // IA vs 3 HTCLs; weak inhib. 1 of 2 NMCLs; abs. config. solved by Snatzke's method.
1049 // N // hippospondine E // IA vs 3 HTCLs and 2 NMCLs; abs. config. solved by Snatzke's method.
1050 // N // hippospondine F // IA vs 3 HTCLs and 2 NMCLs; abs. config. solved by Snatzke's method.
1051 // N // (+)-hippospondine G // IA vs 3 HTCLs and 2 NMCLs; abs. config. solved by Snatzke's method.
1052 // N // (–)-hippospondine G // IA vs 3 HTCLs and 2 NMCLs; abs. config. solved by Snatzke's method.

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- 403** Porifera *Diacarnus spinipoculum* // Bohol Island, Philippines // Norterpene cyclic peroxides from the marine sponge *Diacarnus spinipoculum*, inhibitors of transient receptor potential ankyrin 1
1053 // N // $\text{C}_{20}\text{H}_{34}\text{O}_5$ // IA vs hTRPA1; isol. as mix of epimers.
1054 // A // $\text{C}_{21}\text{H}_{36}\text{O}_5$ // IA vs hTRPA1; isol. as mix of epimers.
1055 // N // $\text{C}_{20}\text{H}_{34}\text{O}_5$ // IA vs hTRPA1.
1056 // N // $\text{C}_{20}\text{H}_{34}\text{O}_5$ // IA vs hTRPA1; isol. as mix of epimers.
1057 // N // $\text{C}_{21}\text{H}_{36}\text{O}_5$ // IA vs hTRPA1; isol. as mix of epimers.
1058 // N // $\text{C}_{24}\text{H}_{38}\text{O}_5$ // IA vs hTRPA1.
1059 // N // $\text{C}_{24}\text{H}_{40}\text{O}_4$ // weak inhib. hTRPA1.
1060 // N // $\text{C}_{25}\text{H}_{42}\text{O}_4$ // IA vs hTRPA1.
1061 // N // $\text{C}_{24}\text{H}_{40}\text{O}_4$ // weak inhib. hTRPA1.
1062 // N // $\text{C}_{25}\text{H}_{42}\text{O}_4$ // IA vs hTRPA1.
- 404** Porifera *Hemimycale* sp. // Ahia Reefs, Hurghada, Egypt // Bioassay-guided isolation and in silico characterization of cytotoxic compounds from *Hemimycale* sp. sponge targeting A549 lung cancer cells
1063 // N // mycalene // NT.
- 405** Porifera *Ircinia felix* // Yucatan Peninsula, Mexico // Uncovering the potent antiviral activity of the sesterterpenoids from the sponge *Ircinia felix* against human adenoviruses: from the natural source to the total synthesis
1064 // N // ircinialactam J // weak inhib. vs 1 virus strain; IA vs 1 NMCL; tot. synth. achieved.
1065 // N // ircinialactam K // IA vs 1 virus strain; IA vs 1 NMCL.
1066 // N // ircinialactam L // IA vs 1 virus strain; IA vs 1 NMCL.
1067 // R // (+)-(7Z,12Z,18R,20Z)-variabilin // weak inhib. vs 1 virus strain; IA vs 1 NMCL.

6 Sponges

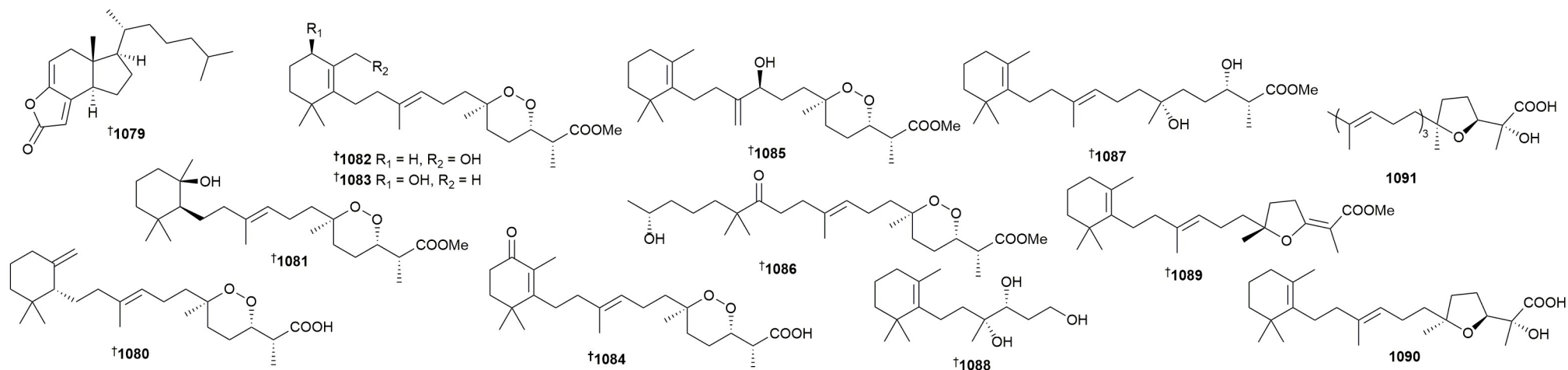


- 406** Porifera *Suberites* sp. // Palmer Station, Antarctica // New sesterterpenes from the Antarctic sponge *Suberites* sp.
1068 // N // suberitenone K // IA vs 1 virus strain; IA vs 1HTCL.
1069 // N // suberitandiol // IA vs 1 virus strain.
1070 // N // abeosuberitandiol // IA vs 1 virus strain.
1071 // N // furanosuberitandiol // IA vs 1 virus strain.
1072 // N // norsuberitenone B // IA vs 1 virus strain.
- 407** Porifera *Lendenfeldia* sp. // Southern Taiwan // Isolation of 24-homoscalarane sesterterpenoids from a sponge of the genus *Lendenfeldia*
1073 // N // lendenfeldarane V // IA vs 1 HTCL; IA vs alkaline phosphatase.
- 408** Porifera *Petrosia nigricans* // Lipata, Surigao City, Philippines // Two new sarasinosides from marine sponge *Petrosia nigricans*
1074 // N // 5,8-epoxysarasinoside // IA vs 2 HTCLs.
1075 // N // 8,9-epoxysarasinoside // IA vs 2 HTCLs.
- 409** Porifera, *Cliona* sp. // Xuwen County, Zhanjiang City, Guangdong Province, China // A new 3,4-dinorsteroid from the marine sponge *Cliona* sp.
1076 // N // 2a-oxa-2-oxo-5 β -hydroxy-3,4-dinor-24-methylcholesta-22*E*-ene // IA vs 6 bact. strains.
- 410** Porifera *Hippospongia lachne* // Xisha Islands, China // Hipposponols A and B, two new 9, 11-secosterols from the marine sponge *Hippospongia lachne* de Laubenfels
1077 // N // hipposponol A // NT.
1078 // N // hipposponol B // IA vs 3 HTCLs.

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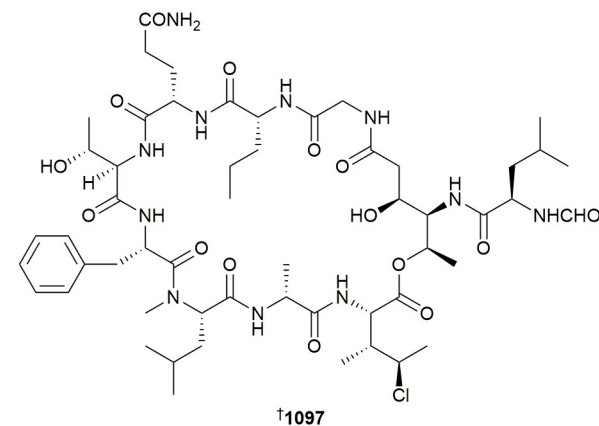
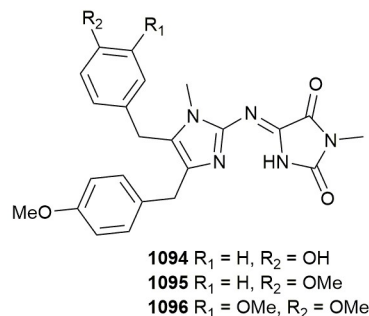
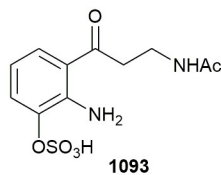
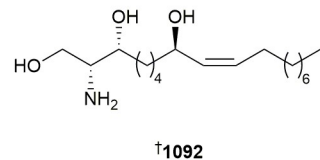


- 411** Porifera *Spongia officinalis* // Ximao Island, Hainan Province, China // Anti-inflammatory steroids from the South China Sea sponge *Spongia officinalis*
1079 // N // 21-nor-4-ene-chaxine A // IA vs 1 HTCL; weak inhib. NO prod.
- 412** Porifera *Diacarnus* sp. // Xisha Islands, China // Cyclic peroxides and analogs: antibacterial, antimalarial, and cytotoxic marine products from Xisha sponge *Diacarnus* sp.
1080 // N // diacarperoxide T // weak cytotox. vs 3 HTCLs; mod. activ. vs 6 bact. strains.
1081 // N // diacarperoxide U // mod. activ. vs 5 of 6 bact. strains.
1082 // N // diacarperoxide V // mod. activ. vs 6 bact. strains.
1083 // N // diacarperoxide W // weak to mod. activ. vs 6 bact. strains.
1084 // N // diacarperoxide X // weak cytotox. vs 3 HTCLs; IA vs 6 bact. strains.
1085 // N // diacarperoxide Y // weak cytotox. vs 3 HTCLs; mod. inhib. vs 6 bact. strains.
1086 // N // diacarperoxide Z // weak activ. vs 2 of 6 bact. strains.
1087 // N // diacarnoid E // weak to mod. activ. vs 6 bact. strains.
1088 // N // diacarnoid F // IA vs 6 bact. strains.
1089 // N // diacarnoid G // weak activ. vs 1 of 6 bact. strains.
1090 // N // diacarnoid H // weak to mod. activ. vs 4 of 6 bact. strains.
1091 // N // diacarnoid I // mod. activ. vs 1 of 6 bact. strains.

Key: Main article bibliography reference // Taxonomy // Location // Article title

Compound number // Status // Compound name // Biological activity and Other information

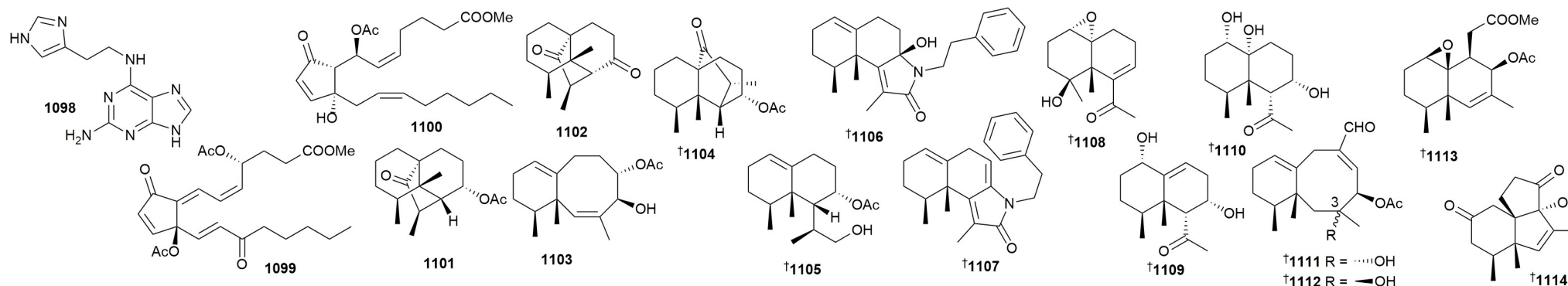
6 Sponges



- 414** Porifera // * // Structure revision of halisphingosine A *via* total synthesis and bioactivity studies
1092 // R // halisphingosine A // revised by total synth.
- 421** Porifera // * // Total synthesis and structural reassignment of the molt-inhibiting marine alkaloid erebusinone
1093 // R // erebusinone // revised by total synth.
- 442** Porifera // * // Chemoproteomics of marine natural product naamidine J unveils CSE1L as a therapeutic target in acute lung injury
1094 // R // naamidine A // reassigned following XRD.
1095 // R // naamidine G // reassigned following XRD.
1096 // R // naamidine J // reassigned following XRD.
- 447** Porifera // * // Absolute configuration of 4-chloroisoleucine in cyclolithistide A: an antifungal peptide lactone discovered in marine lithistid sponges
1097 // R // cyclolithistide A // rel. and abs. config. of 4-chloroisoleucine residue det. by synth. of all 4 diastereomers and comparison using Marfeys.

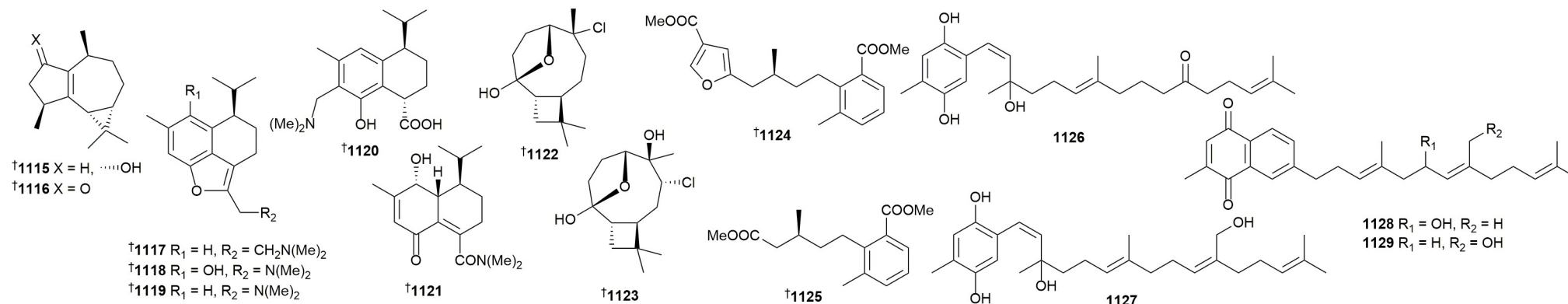
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Compound number // Status // Compound name // Biological activity and Other information

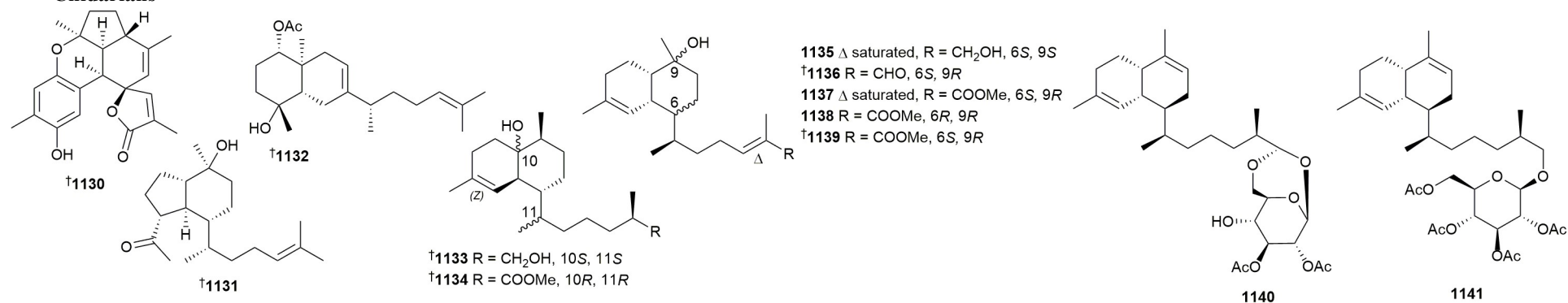


- 451** Cnidaria *Acrozoanthus australiae* // Etal Atoll, Chuuk, Federated States of Micronesia // Acroamine A, a 2-amino adenine alkaloid from the marine soft coral *Acrozoanthus australiae* and its semisynthetic derivatives that inhibit cAMP-dependent protein kinase A catalytic subunit alpha
1098 // M // acroamine A // IA vs 2 kinases.
- 454** Cnidaria *Clavularia* sp // Green Island, Taiwan // Marine prostanoids with cytotoxic activity from octocoral *Clavularia* spp.
1099 // N // clavulone I-15-one // weak cytotox. vs 1 HTCL.
1100 // N // 12-O-deacetylclavulone I // NT.
- 455** Cnidaria *Lemnalia* sp // Al-Lith, Saudi Arabia // Isolation and bioactivity evaluation of sesquiterpenes from an alcyonarian of the genus *Lemnalia* from the Saudi Arabian Red Sea
1101 // N // (1R,2S,4aR,8S,8aS,10R)-8,8a,10-trimethyl-9-oxooctahydro-2H-1,4a-ethanonaphthalen-2-yl acetate // NT.
1102 // N // (1R,4aR,8S,8aS,10R)-8,8a,10-trimethyloctahydro-2H-1,4a-ethanonaphthalene-2,9-dione // NT.
1103 // N // (1S,7S,8S,10aS,Z)-8-hydroxy-1,9,10a-trimethyl-1,2,3,5,6,7,8,10a-octahydrobenzo[8]annulen-7-yl acetate // NT.
- 456** Cnidaria *Stereonephthya bellissima* // Xisha Island, China // Terpenoids from the soft coral *Stereonephthya bellissima*
1104 // N // bellissinane A // XRD; IA pro-angiogenesis activ.
1105 // N // bellissinane B // XRD; IA pro-angiogenesis activ.
1106 // N // bellissinane C // XRD; IA pro-angiogenesis activ.
1107 // N // bellissinane D // IA pro-angiogenesis activ.
1108 // N // bellissinane E // XRD; IA pro-angiogenesis activ.
1109 // N // bellissinane F // XRD; IA pro-angiogenesis activ.
1110 // N // bellissinane G // XRD; IA pro-angiogenesis activ.
- 457** Cnidaria *Lemnalia* sp. // Xisha Island, China // Lemneolemnanes A–D, four uncommon sesquiterpenoids from the soft coral *Lemnalia* sp.
1111 // N // lemneolemnane A // XRD; IA vs cytotox., IA vs anti-inflam.; IA vs anti-AD.
1112 // N // lemneolemnane B // XRD; IA vs cytotox., IA vs anti-inflam.; IA vs anti-AD.
1113 // N // lemneolemnane C // XRD; IA vs cytotox., IA vs anti-inflam.; IA vs anti-AD.
1114 // N // lemneolemnane D // XRD; IA vs cytotox., IA vs anti-inflam.; IA vs anti-AD.

7 Cnidarians

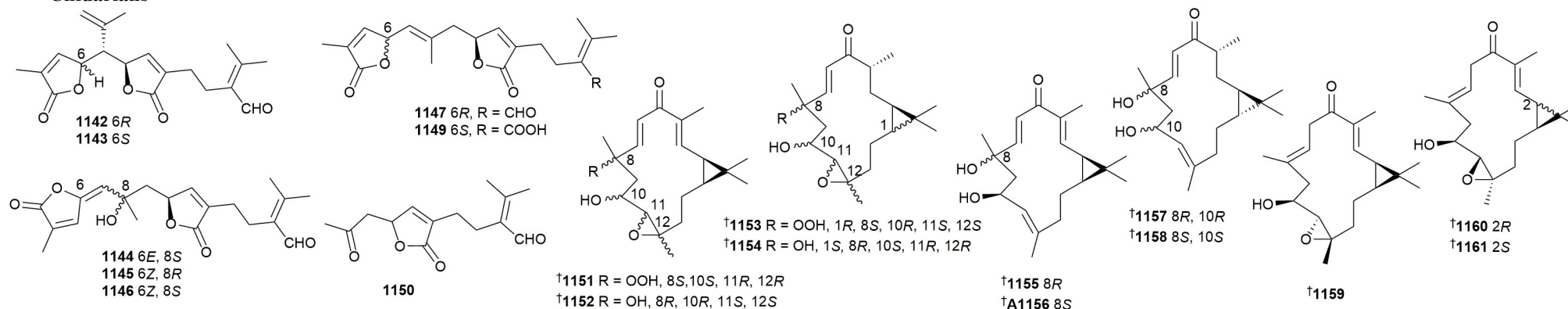


- 458** Cnidaria *Heteroxenia* sp. // Yonaguni Island, Okinawa, Japan // Two isolatedene-type sesquiterpenoids from a soft coral *Heteroxenia* sp.
1115 // N // (1a*S*,4*S*,5*S*,7*S*,7*bR*)-1,1,4,7-tetramethyl-1a,2,3,4,5,6,7,7b-octahydro-1*H*-cyclopropa[*e*]azulen-5-ol // IA vs SARS-CoV-2; IA vs *Leishmania major*.
1116 // N // (1a*S*,4*S*,7*S*,7*bR*)-1,1,4,7-tetramethyl-1,1a,2,3,4,6,7,7b-octahydro-5*H*-cyclopropa[*e*]azulen-5-one // XRD; IA vs SARS-CoV-2; IA vs *Leishmania major*.
- 459** Cnidaria *Anthothela grandiflora* // Whittard Canyon // Anthoteibinenes A–E from the Irish deep-sea coral *Anthothela grandiflora*: an amination puzzle
1117 // N // anthoteibinene A // IA vs bact. strains; IA vs fungal strains.
1118 // N // anthoteibinene B // IA vs bact. strains; IA vs fungal strains; IA vs 1 virus strain.
1119 // N // anthoteibinene C // IA vs bact. strains; IA vs fungal strains; weak activ. vs 1 virus strain.
1120 // N // anthoteibinene D // IA vs bact. strains; IA vs fungal strains.
1121 // N // anthoteibinene E // IA vs bact. strains; IA vs fungal strains; IA vs 1 virus strain.
- 463** Cnidaria // * // Bioinspired semisynthesis and structure revisions of chlorinated norsesquiterpenoids rumphellatins A–C
1122 // R // rumphellatin A // XRD; NT.
1123 // R // rumphellatin C // XRD; NT.
- 464** Cnidaria *Sinularia densa* // Ganquan island // Terpenoids from the soft coral *Sinularia densa* collected in the South China Sea
1124 // N // sinudenoid F // IA vs anti-inflam.
1125 // N // sinudenoid G // IA vs anti-inflam.
- 465** Cnidaria *Litophyton brassicum* // Xisha Islands, China // New meroterpenes from South China Sea soft coral *Litophyton brassicum*
1126 // N // brassihydroxybenzoquinone A // IA vs 3 HTCLs; IA vs 6 bact. strains.
1127 // N // brassihydroxybenzoquinone B // IA vs 3 HTCLs; IA to weak activ. vs 6 bact. strains.
1128 // N // brassinaphthoquinone A // IA vs 3 HTCLs; IA vs 6 bact. strains.
1129 // N // brassinaphthoquinone B // IA vs 3 HTCLs; IA vs 6 bact. strains.



- 466** Cnidaria // * // Asymmetric total synthesis of (+)-verrubenzospinolactone and (+)-capillobenzopyranol
1130 // R // (+)-verrubenzospinolactone // Total synth. achieved; abs. config. by synth.
- 456** Cnidaria *Stereonephthya bellissima* // Xisha Island, China // Terpenoids from the soft coral *Stereonephthya bellissima*
1131 // N // herpetopanone B // IA vs pro-angiogenesis activ.
1132 // N // bellissimain A // IA vs pro-angiogenesis activ.
1133 // N // elisabethadienol B // XRD; IA vs pro-angiogenesis activ.
1134 // N // elisabethadienol C // IA vs pro-angiogenesis activ.
- 467** Cnidaria *Lemnalia bournei* // Xisha Islands, China // New diterpenes and diterpene glycosides with antibacterial activity from soft coral *Lemnalia bournei*
1135 // N // biofloranate E // IA vs 3 HTCLs; IA vs 5 bact. strains.
1136 // N // biofloranate F // IA vs 3 HTCLs; IA vs 5 bact. strains.
1137 // N // biofloranate G // IA vs 3 HTCLs; IA vs 5 bact. strains.
1138 // N // biofloranate H // IA vs 3 HTCLs; IA vs 5 bact. strains.
1139 // N // biofloranate I // IA vs 3 HTCLs; IA vs 5 bact. strains.
1140 // N // lemnabourside H // IA vs 3 HTCLs; IA to weak activ. vs 5 bact. strains.
1141 // N // lemnabourside I // IA vs 3 HTCLs; IA vs 5 bact. strains.

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468 Cnidaria *Antillogorgia kallos* // Old Providence Island, Colombia // Kallopterolides A–I, a new subclass of seco-diterpenes isolated from the southwestern Caribbean Sea plume *Antillogorgia kallos*

1142 // N // kallopterolide A // IA vs anti-inflam; IA vs Mtb.

1143 // N // kallopterolide B // IA vs anti-inflam.

1144 // N // kallopterolide C // IA vs anti-inflam.

1145 // N // kallopterolide D // IA vs anti-inflam; IA vs *P. falciparum*.

1146 // N // kallopterolide E // IA vs anti-inflam; IA vs *P. falciparum*; IA vs Mtb.

1147 // N // kallopterolide F // NT.

1148 // N // kallopterolide G // NT.

1149 // N // kallopterolide H // NT.

1150 // N // kallopterolide I // NT.

470 Cnidaria *Simularia erecta*, Cnidaria *Sclerophyllum erectum* // Ximao Island, Hainan province, China // Macrocyclic anti-inflammatory diterpenes from the South China Sea soft coral *Simularia erecta* and their isolation by combined column chromatography

1151 // N // sinueracasbanone E // XRD; IA vs anti-inflam.

1152 // N // sinueracasbanone F // IA vs anti-inflam.

1153 // N // sinueracasbanone G // IA vs anti-inflam.

1154 // N // sinueracasbanone H // IA vs anti-inflam.

1155 // N // sinueracasbanone I // weak vs anti-inflam.

1156 // N // sinueracasbanone J // IA vs anti-inflam.

1157 // N // sinueracasbanone K // IA vs anti-inflam.

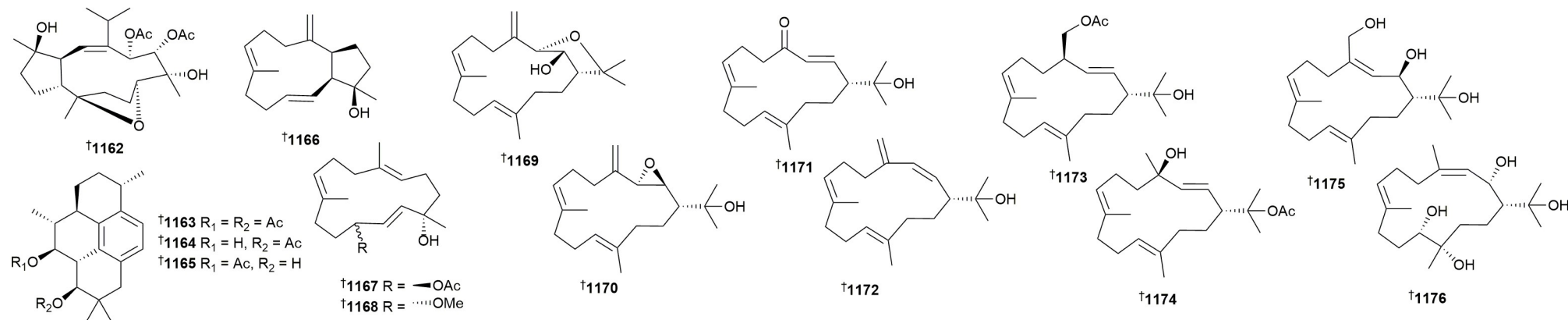
1158 // N // sinueracasbanone L // IA vs anti-inflam.

1159 // N // sinueracasbanone M // IA vs anti-inflam.

1160 // N // sinueracasbanone N // IA vs anti-inflam.

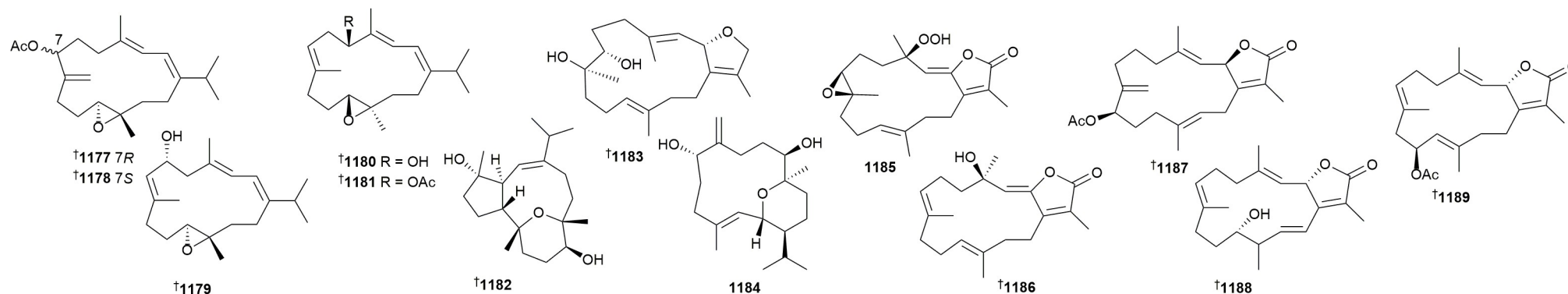
1161 // N // sinueracasbanone O // weak activ. vs anti-inflam.

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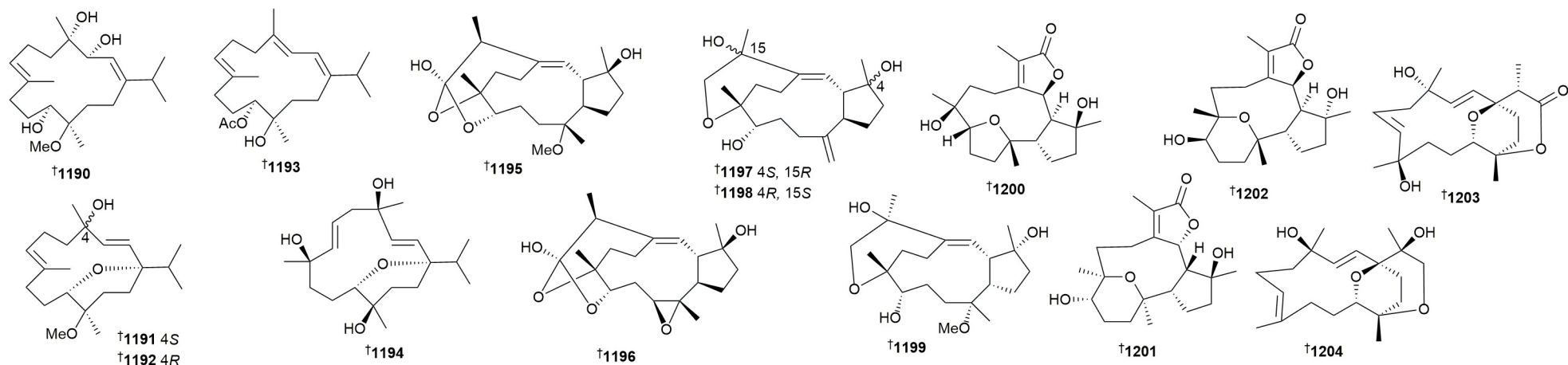
- 471** Cnidaria *Lobophytum pauciflorum* // Yongle Islands, Xisha Islands, China // A new capnosane-type diterpenoid from the South China Sea soft coral *Lobophytum pauciflorum* **1162** // N // (1R,3aR,4R,7R,8R,9S,10R,12aS,Z)-1,8-dihydroxy-11-isopropyl-1,4,8-trimethyl-1,2,3,3a,4,5,6,7,8,9,10,12a-dodecahydro-4,7-epoxycyclopenta[11]annulene-9,10-diyl diacetate // IA vs anti-inflam.
- 472** Cnidaria *Simularia brassica* // Xuwen County, Guangdong Province, China // Four uncommon cycloamphilectane-type diterpenoids with antibacterial activity from the South China Sea soft coral *Simularia brassica*
1163 // N // sinucycloamtin A // XRD; IA to weak activ. vs 4 bact. strains.
1164 // N // sinucycloamtin B // IA to weak activ. vs 4 bact. strains.
1165 // N // sinucycloamtin C // IA to weak activ. vs 4 bact. strains.
- 474** Cnidaria *Litophyton amentaceum* // Antelope reef, Xisha Island, China // Litoamentenes A–K, eleven undescribed cembranoids with cytotoxicity from the South China Sea soft coral *Litophyton amentaceum*
1166 // N // litoamentene A // IA vs anti-inflam;
1167 // N // litoamentene B // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1168 // N // litoamentene C // IA vs anti-inflam.
1169 // N // litoamentene D // XRD; IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1170 // N // litoamentene E // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1171 // N // litoamentene F // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1172 // N // litoamentene J // IA vs anti-inflam.
1173 // N // litoamentene H // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1174 // N // litoamentene I // IA vs anti-inflam; IA to weak cytotox. vs 5 HTCLs and 1 NMCL.
1175 // N // litoamentene J // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.
1176 // N // litoamentene K // IA vs anti-inflam; IA vs 5 HTCLs and 1 NMCL.

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- 475** Cnidaria *Lobophytum catalai* // Yalong Bay, Hainan Province, China // Nine new antibacterial diterpenes and steroids from the South China Sea soft coral *Lobophytum catalai* Tixier-Durivault
1177 // N // lobocaline A // XRD; NT.
1178 // N // lobocaline B // IA to weak activ. vs 14 bact. strains; inhib. hemolysin prodn. by *S. aureus*.
1179 // N // lobocaline C // NT.
1180 // N // lobocaline D // NT.
1181 // N // lobocaline E // NT.
1182 // R // lobophytrol B // XRD; NT.
- 476** Cnidaria *Sarcophyton stellatum* // Dongsha Atoll, Taiwan // **7S,8R**-dihydroxydeepoxysarcophytoxide: a natural dihydrofuranocembranoid from the octocoral *Sarcophyton stellatum*
1183 // R // **7S,8R**-dihydrodeepoxysarcophytoxide // XRD; Active vs alkaline phosphatase.
- 477** Cnidaria *Sarcophyton glaucum* // Hurghada, Egypt // Pyrane-based cembranoid and 2-dehydro-4-peroxy-sarcophine: two new diterpenes from *Sarcophyton glaucum*
1184 // N // 9-exo-methylene-10-hydroxysarcotrocheliol // IA vs 4 bact. strains; IA vs 1 fungus.
1185 // N // 2-dehydro-4-peroxy-sarcophine // IA vs 4 bact. strains; IA vs 1 fungus.
- 478** Cnidaria *Sarcophyton elegans* // YaGong island, China // Sarcoeleganolides H–K, new anti-thrombotic cembranes from soft coral *Sarcophyton elegans*
1186 // N // sarcoeleganolide H // NT.
1187 // N // sarcoeleganolide I // IA vs thrombosis.
1188 // N // sarcoeleganolide J // NT.
1189 // N // sarcoeleganolide K // NT.

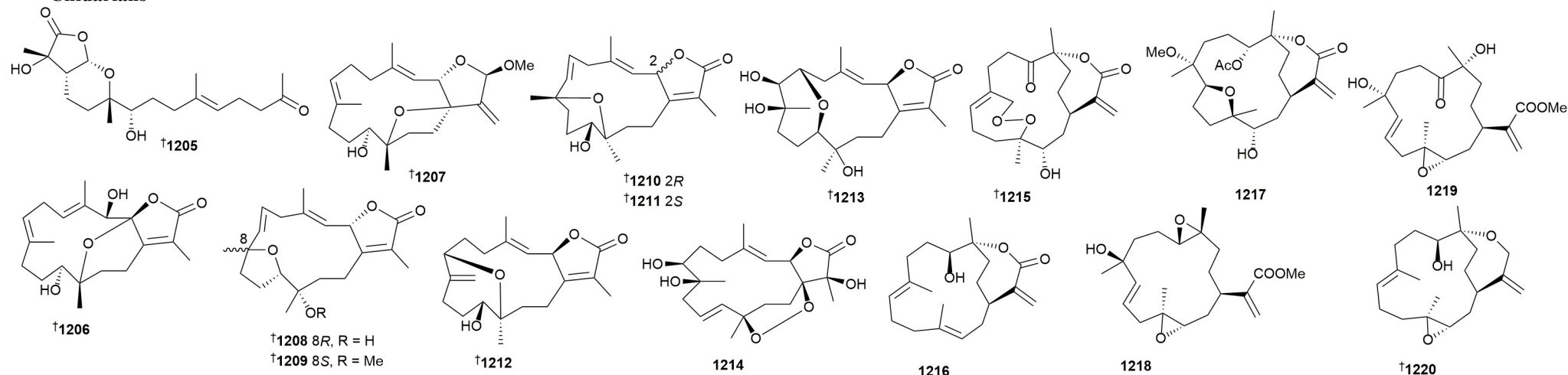
7 Cnidarians



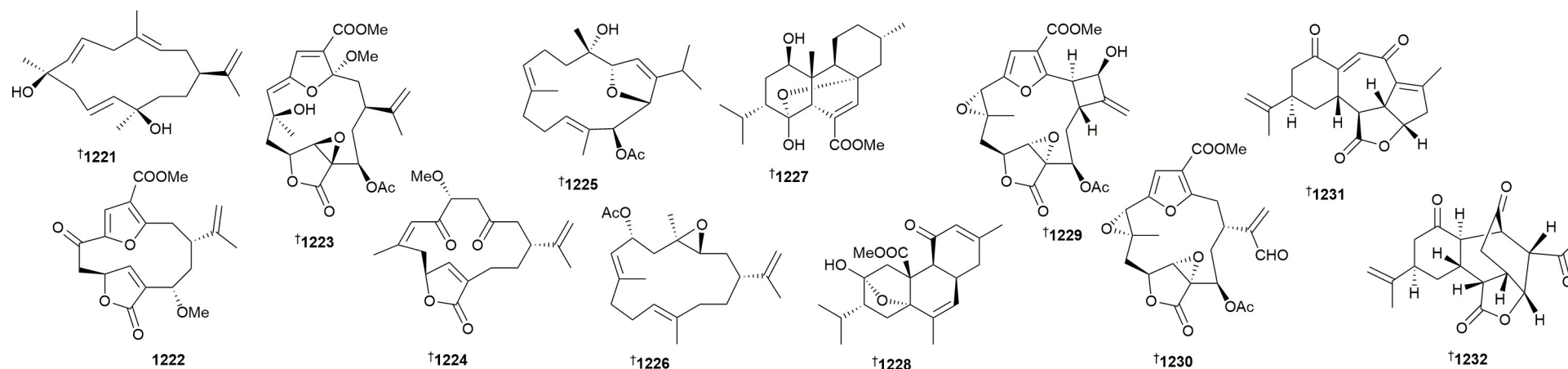
- 479** Cnidaria *Sarcophyton crassocaule* // Meiji Reef, Nansha Islands, Hainan Province, China // Cembranoid diterpenes from South China Sea soft coral *Sarcophyton crassocaule*
- 1190** // N // meijicrassolin A // XRD; IA vs 5 HTCLs.
 - 1191** // N // meijicrassolin B // IA vs 5 HTCLs.
 - 1192** // N // meijicrassolin C // IA vs 5 HTCLs; IA vs anti-inflam.
 - 1193** // N // meijicrassolin D // IA vs 5 HTCLs; IA vs anti-inflam.
 - 1194** // N // meijicrassolin E // IA vs 5 HTCLs.
- 480** Cnidaria *Sarcophyton cinereum* // Xisha Island, China // Sarcocinerenoids A—J, eight rare capnosane-type and two new cage-type cembranoids with promoting angiogenesis activity from the South China Sea soft coral *Sarcophyton cinereum*
- 1195** // N // sarcocinerenoid A // XRD; pro-angiogenesis activ.
 - 1196** // N // sarcocinerenoid B // XRD; IA vs pro-angiogenesis activ.
 - 1197** // N // sarcocinerenoid C // XRD; IA vs pro-angiogenesis activ.
 - 1198** // N // sarcocinerenoid D // pro-angiogenesis activ.
 - 1199** // N // sarcocinerenoid E // IA vs pro-angiogenesis activ.
 - 1200** // N // sarcocinerenoid F // XRD; IA vs pro-angiogenesis activ.
 - 1201** // N // sarcocinerenoid G // XRD; IA vs pro-angiogenesis activ.
 - 1202** // N // sarcocinerenoid H // IA vs pro-angiogenesis activ.
 - 1203** // N // sarcocinerenoid I // XRD; IA vs pro-angiogenesis activ.
 - 1204** // N // sarcocinerenoid J // IA vs pro-angiogenesis activ.

Key: Main article bibliography reference // Taxonomy // Location // Article title

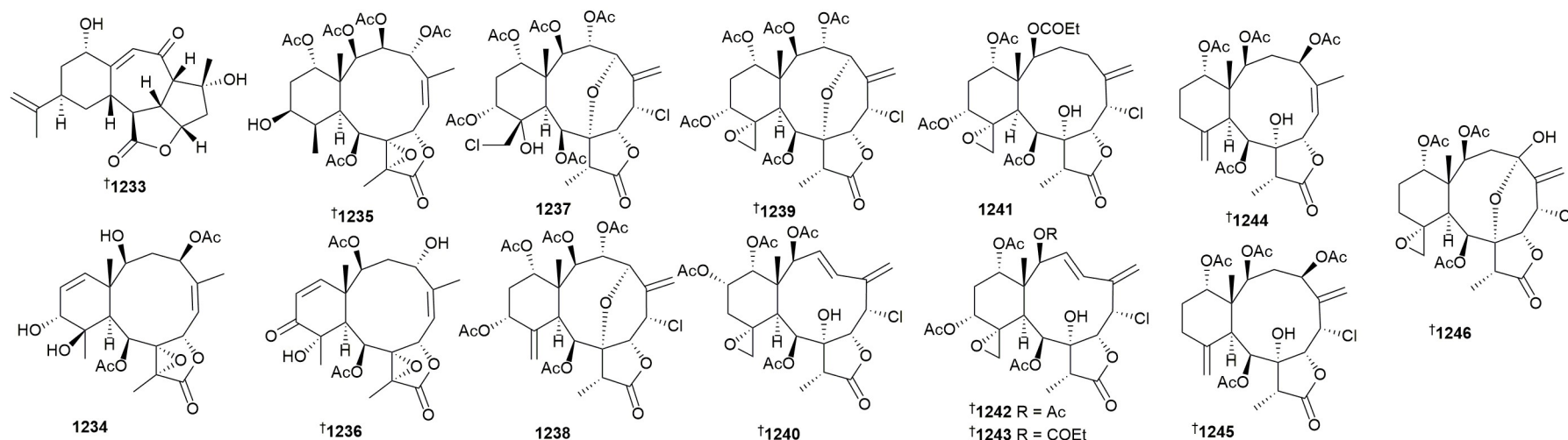
Compound number // Status // Compound name // Biological activity and Other information



- 481** Cnidaria *Sarcophyton cinereum* // Xisha Island, China // Sarcocinerenolides A, an open-loop decarbonizing cembranolide, and sarcocinerenolides B–I, eight polyoxygenated cembranolides with anti-thrombotic activity from the South China Sea soft coral *Sarcophyton cinereum*
1205 // N // sarcocinerenolide A // IA vs thrombosis in zebrafish model.
1206 // N // sarcocinerenolide B // IA vs thrombosis in zebrafish model.
1207 // N // sarcocinerenolide C // IA vs thrombosis in zebrafish model.
1208 // N // sarcocinerenolide D // IA vs thrombosis in zebrafish model.
1209 // N // sarcocinerenolide E // IA vs thrombosis in zebrafish model.
1210 // N // sarcocinerenolide F // IA vs thrombosis in zebrafish model.
1211 // N // sarcocinerenolide G // IA vs thrombosis in zebrafish model.
1212 // N // sarcocinerenolide H // IA vs thrombosis in zebrafish model.
1213 // N // sarcocinerenolide I // IA vs thrombosis in zebrafish model.
- 482** Cnidaria *Sarcophyton acutum* // Hurghada, Egypt // A new cembranoid from the Red Sea soft coral *Sarcophyton acutum*
1214 // N // sarcacutumolid A // IA vs 4 HTCLs.
- 483** Cnidaria *Sinularia pedunculata* // Ximao Island, Hainan Province, China // The first discovery of marine polyoxygenated cembranolides as potential agents for the treatment of ulcerative colitis
1215 // N // sinupedunolide A // XRD; IA vs NO prod.
1216 // N // sinupedunolide B // IA vs NO prod.
1217 // N // sinupedunolide C // IA vs NO prod.
1218 // N // sinupedunolide D // IA vs NO prod.
1219 // N // sinupedunolide E // IA vs NO prod.
1220 // N // sinupedunol A // XRD; IA vs NO prod.



- 484** Cnidaria *Simularia pedunculata*, Cnidaria *Sclerophyllum pedunculatum* // Ximao Island, Hainan Province, China // Anti-HBV activities of cembranoids from the South China Sea soft coral *Simularia pedunculata* and their structure activity relationship
1221 // N // sinupedunol B // XRD; IA vs 1 virus strain.
- 464** Cnidaria *Simularia densa* // Ganquan island // Terpenoids from the soft coral *Simularia densa* collected in the South China Sea
1222 // N // sinudenoid H // IA vs anti-inflam; IA vs thrombosis in zebrafish model.
1223 // N // sinudenoid I // IA vs anti-inflam; IA vs thrombosis in zebrafish model.
1224 // N // sinudenoid J // XRD; IA vs anti-inflam; IA vs thrombosis in zebrafish model.
1225 // N // sinudenoid K // IA vs anti-inflam; IA vs thrombosis in zebrafish model.
1226 // N // sinudenoid L // IA vs anti-inflam; IA vs thrombosis in zebrafish model.
- 485** Cnidaria *Sarcophyton tortuosum* // Ximao Island, Hainan Province, China // Two new diterpenoids formed by transannular Diels–Alder cycloaddition from the soft coral *Sarcophyton tortuosum*, and their antibacterial and PPAR- β agonist activities
1227 // N // 4 α -hydroxy-chatancin // XRD; IA to weak activ. vs 20 bact. strains; weak inhib. PPAR.
1228 // N // sarcotoroid // IA vs 20 bact. strains.
- 486** Cnidaria // * // Enantioselective synthesis of (+)-providencin and its unexpected regioisomer via a biomimetic Norrish–Yang cyclization from (–)-bipinnatin E
1229 // R // (+)-providencin // semi-synthesis from (–)-bipinnatin E.
1230 // R // (–)-bipinnatin E // XRD.
- 487** Cnidaria // * // Total synthesis of the norcembranoid scabrolide B and its transformation into sinuscalide C, ineleganolide, and horiolide
1231 // R // (–)-sinuscalide C // abs. config. by synth.
1232 // R // (+)-horiolide // abs. config. by synth.

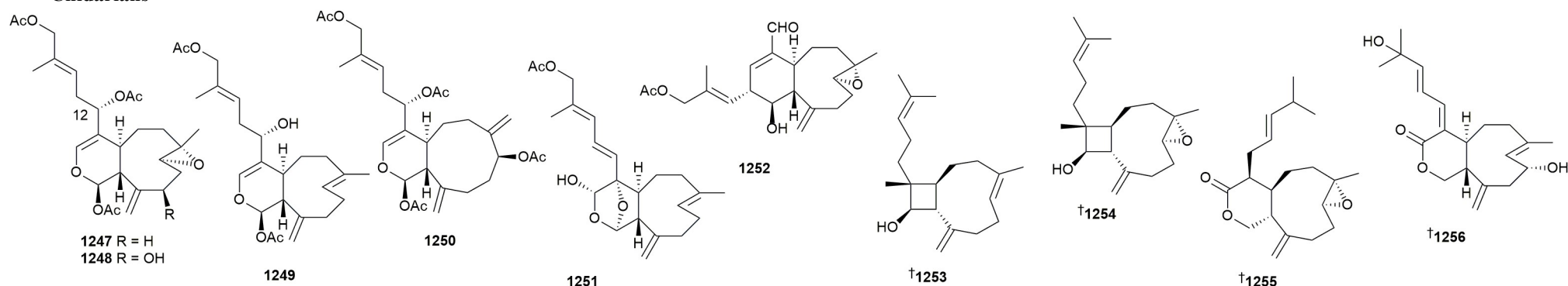


- 488** Cnidaria // * // Total syntheses of scabrolide B, ineleganolide, and related norcembranoids
1233 // R // (+)-fragilolide A // abs. config. by synth.
- 496** Cnidaria *Briareum stechei* // Pingtung, Taiwan // Discovery of polyoxygenated briaranes from octocoral *Briareum stechei*
1234 // N // briastecholide O // IA vs osteoblast differentiation.
1235 // N // briastecholide P // XRD; IA vs osteoblast differentiation.
1236 // R // briaexcavatin X // XRD; abs. config. assigned; IA vs osteoblast differentiation.
- 497** Cnidaria *Junceella fragilis* // Southern Taiwan // Chlorine-containing polyacetoxylated briarane diterpenoids from the octocoral *Junceella fragilis*
1237 // N // 12 α -acetoxyfragilide F // IA as alkaline phosphatase enhancer.
1238 // N // 12 α -acetoxyjunceellin // IA as alkaline phosphatase enhancer.
1239 // R // gemmacolide X // XRD; abs. config. assigned.
1240 // R // frajunolide I // XRD; abs. config. assigned.
- 498** Cnidaria *Junceella fragilis* // Southern Taiwan // Structures of polyacetoxylated briaranes extracted from the sea whip octocoral *Junceella fragilis*
1241 // N // fragilide Z // IA as alkaline phosphatase enhancer; promote stem cell growth.
1242 // R // 12-*epi*-fragilide G // XRD; abs. config. assigned; IA as alkaline phosphatase enhancer; promote stem cell growth.
1243 // R // fragilide P // XRD; AC assigned; IA as alkaline phosphatase enhancer; promote stem cell growth.
1244 // R // junceellolide D // XRD; abs. config. assigned; IA as alkaline phosphatase enhancer; promote stem cell growth.
1245 // R // junceellonoid A // XRD; abs. config. assigned; IA as alkaline phosphatase enhancer; promote stem cell growth.
1246 // R // juncin ZI // XRD; abs. config. assigned; IA as alkaline phosphatase enhancer; promote stem cell growth.

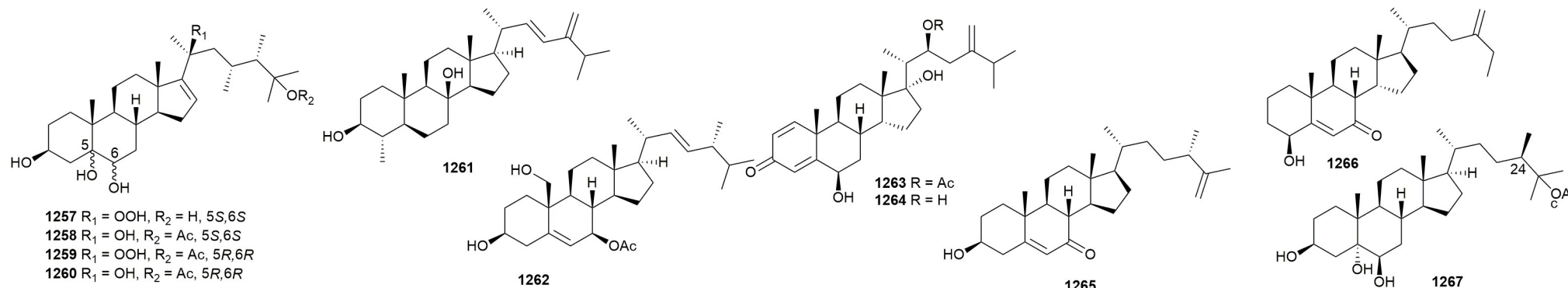
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Compound number // Status // Compound name // Biological activity and Other information

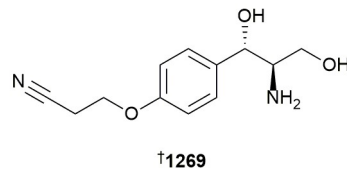
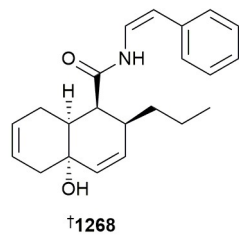
7 Cnidarians



- 500** Cnidaria *Sarcothelia edmondsoni* // Lanikai Beach, Oahu, Hawaii // Transient receptor potential melastatin 7 (TRPM7) ion channel inhibitors: preliminary SAR and conformational studies of xenicane diterpenoids from the Hawaiian soft coral *Sarcothelia edmondsoni*
1247 // M // 7*S*,8*S*-epoxywaixenicin A // IA vs TRPM7; may be artefact.
1248 // N // 7*S*,8*S*-epoxywaixenicin B // weak inhib. TRPM7; may be artefact.
1249 // N // 12-deacetylwaixenicin A // IA vs TRPM7.
1250 // N // waixenicin E // IA vs TRPM7.
1251 // N // waixenicin F // IA vs TRPM7.
1252 // N // 20-acetoxyseniaraunol B // IA vs TRPM7.
- 501** Cnidaria *Paragorgia arborea* // Whittard Canyon, Northeastern Atlantic // Xeniaphyllane and xeniolide diterpenes from the deep-sea soft coral *Paragorgia arborea*
1253 // N // miolenol // weak cytotox. vs macrophages; IA vs *P. falciparum*.
1254 // N // epoxymiolenol // IA vs *P. falciparum*.
1255 // N // epoxycoraxeniolide A // IA vs *P. falciparum*.
- 502** Cnidaria // * // Total synthesis of isoxeniolide A
1256 // R // isoxeniolide A // abs. config. by synth.



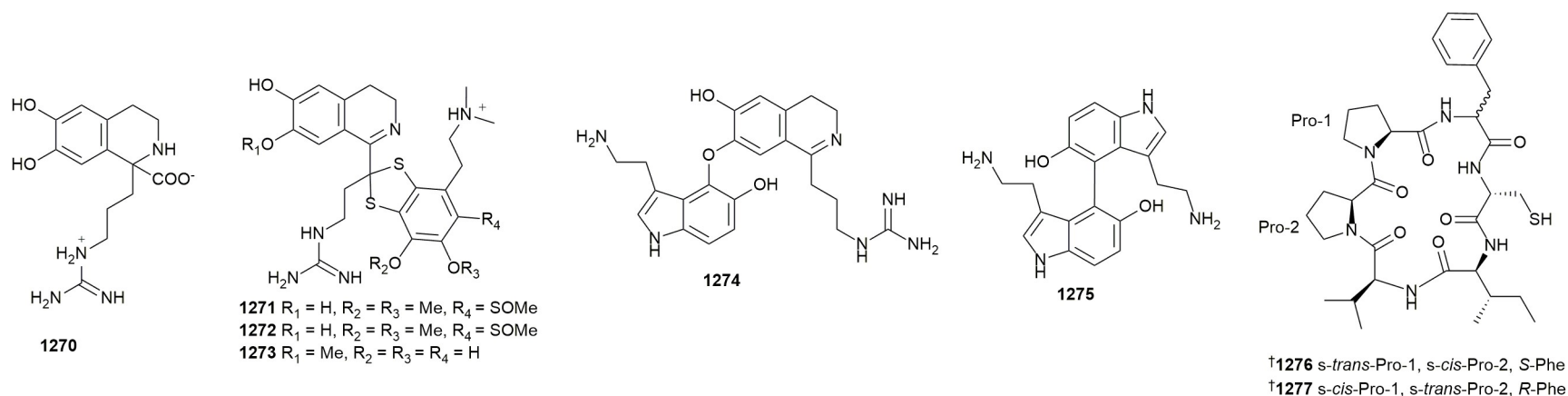
- 475** Cnidaria *Lobophytum catalai* // Yalong Bay, Hainan Province, China // Nine new antibacterial diterpenes and steroids from the South China Sea soft coral *Lobophytum catalai* Tixier-Durivault
1257 // N // lobocaloid A // IA vs 14 bact. strains; IA vs pyocyanin prod. by *P. aeruginosa*.
1258 // N // lobocaloid B // IA vs 14 bact. strains; IA vs pyocyanin prod. by *P. aeruginosa*.
1259 // N // lobocaloid C // IA vs 14 bact. strains; IA vs pyocyanin prod. by *P. aeruginosa*.
1260 // N // lobocaloid D // IA vs 14 bact. strains; IA vs pyocyanin prod. by *P. aeruginosa*.
- 503** Cnidaria *Litophyton mollis* // Hurghada Marine Station, Red Sea // Cytotoxic evaluation of new polyhydroxylated steroids from the Red Sea soft coral *Litophyton mollis* (Macfadyen, 1936)
1261 // N // (22E)-4 α ,24-dimethyl-5 α -cholesta-22,24(28)-dien-3 β ,8 β -diol // IA vs 3 HTCLs.
1262 // N // (22E,24R)-7 β -acetoxy-24-methyl-cholesta-5,22-dien-3 β ,19-diol // IA to weak cytotox. vs 3 HTCLs.
- 504** Cnidaria *Capnella imbricata* // Orchid Island, Taiwan // Capnesterones A and B, new steroids isolated from the soft coral *Capnella imbricata*
1263 // N // capnesterone A // weak vs anti-inflam.
1264 // N // capnesterone B // weak vs anti-inflam.
- 505** Cnidaria *Lobophytum durum* // Guishan Island, Taiwan // A new sterol from the Formosan soft coral *Lobophytum durum*
1265 // N // 3 β -hydroxy-25-methylene-5-cholesten-7-one // IA vs anti-inflam.
- 506** Cnidaria *Capnella imbricata* // Orchid Island // A new sterol-related metabolite from the soft coral *Capnella imbricata*
1266 // N // 4 β -hydroxy-24-methylene-5-cholesten-7-one // IA vs anti-inflam.
- 505** Cnidaria *Lobophytum durum* // Guishan Island, Taiwan // A new sterol from the Formosan soft coral *Lobophytum durum*
1267 // R // (24R)-ergostane-3 β ,5 α ,6 β ,25-tetraol 25-monoacetate // XRD defined rel. config; promotes superoxide release.



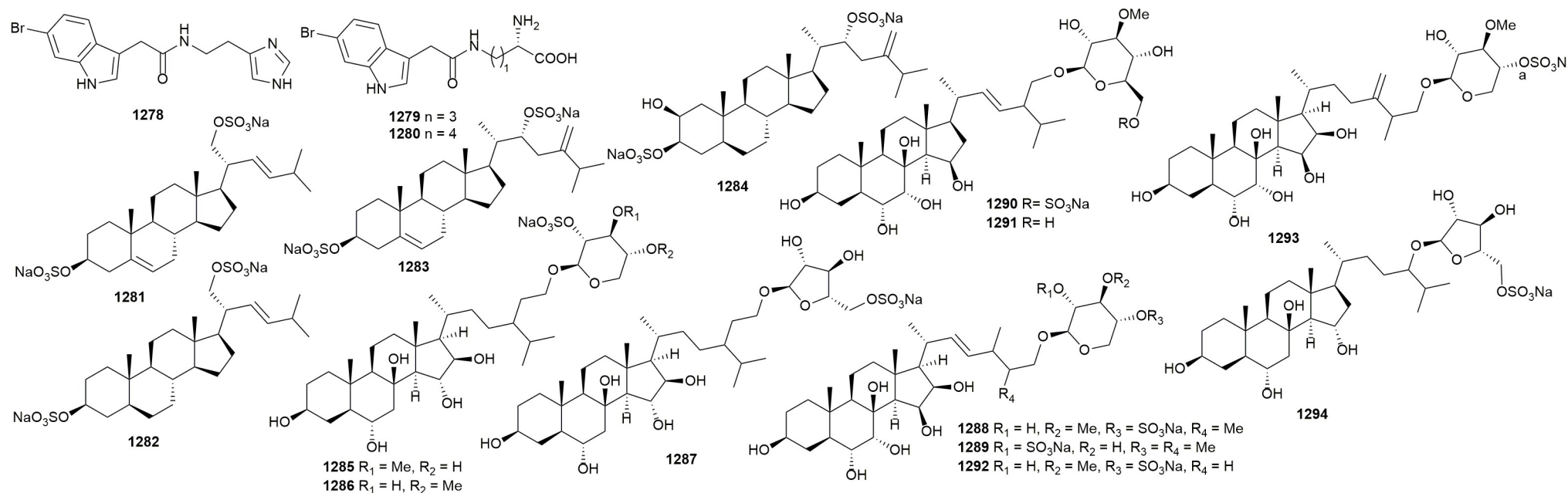
516 Mollusca *Bursatella leachii* // Xiamen Island, Fujian, China // The biologically and ecologically important natural products from the Chinese sea hare *Bursatella leachii*: structures, stereochemistry and beyond

1268 // N // bursatamide A // IA vs 2 bact. strains.

1269 // N // bursatellin B // IA vs 3 bact. strains.



- 539** Chordata // Republic of Palau // Dopamine-derived guanidine alkaloids from a Didemnidae tunicate: isolation, synthesis, and biological activities
1270 // N // 1-carboxydopargine // IA vs 3 virus strains.
1271 // N // mellpaladine D // induce tremors in mice; IA vs 2 HTCLs and 1 NMCL; IA vs 3 virus strains.
1272 // N // mellpaladine E // sulfoxide stereoisomer; Artefactual autooxidation?; Induce tremors in mice; IA vs 2 HTCLs and 1 NMCL; IA vs 3 virus strains.
1273 // N // mellpaladine F // sulfoxide stereoisomer; Artefactual autooxidation?; Induce whole body convulsion in mice; IA vs 2 HTCLs and 1 NMCL; IA vs 3 virus strains.
1274 // N // serotodopargimine // IA vs 3 virus strains.
1275 // M // 5,5'-dihydroxy-4,4'-bistryptamine // IA vs 3 virus strains.
- 540** Chordata // * // Synthesis and structural revision of the cyclic hexapeptide dimers antatollamides A and B
1276 // R // antatollamide A // revised by total synth.; NT.
1277 // R // antatollamide B // revised by total synth.; NT.



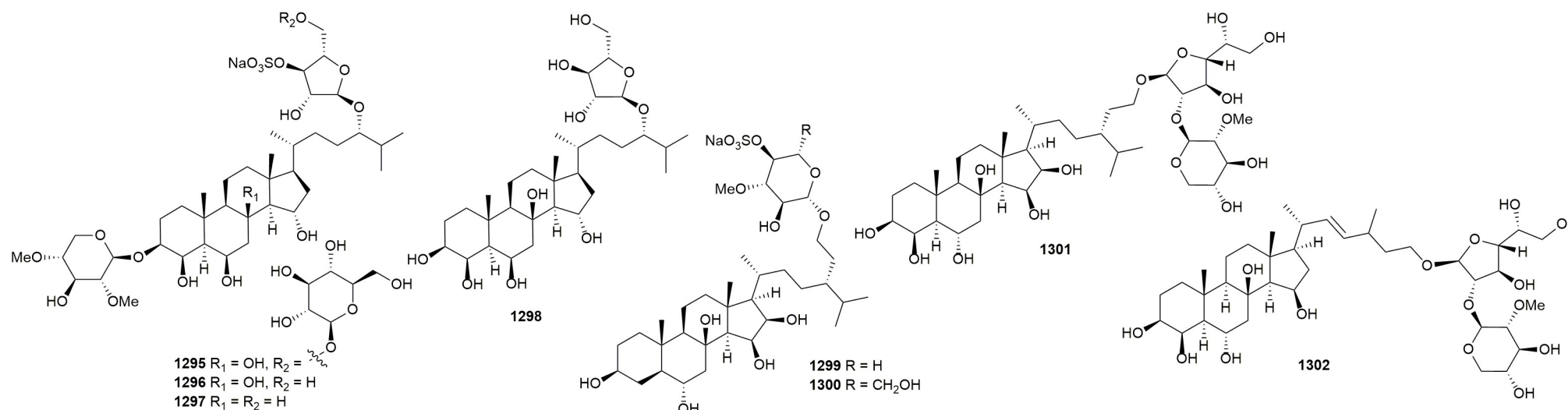
- 553** Echinodermata *Thromidia catalai* // Hachijo-Jima, Japan // Catalindoles A–C: brominated indole alkaloids from the starfish *Thromidia catalai*, which feeds on *Theonella* sponges
1278 // N // catalindole A // IA vs 5 bact. strains; IA vs 1 fungus; IA vs 2 HTCLs.
1279 // N // catalindole B // IA vs 5 bact. strains; IA vs 1 fungus; IA vs 2 HTCLs.
1280 // N // catalindole C // IA vs 5 bact. strains; IA vs 1 fungus; IA vs 2 HTCLs.
- 554** Echinodermata *Pteraster marsippus* // Urup Island, Sea of Okhotsk // Rare ophiuroid-type steroid 3 β ,21-, 3 β ,22-, and 3 α ,22-disulfates from the slime sea star *Pteraster marsippus* and their colony-inhibiting effects against human breast cancer cells
1281 // N // (20*R*,22*E*)-24-norcholesta-5,22-diene-3 β ,21-diol 3,21-disulfate // IA vs 3 HTCLs; IA vs colony form. 3 HTCLs.
1282 // N // (20*R*,22*E*)-24-nor-5 α -cholest-22-ene-3 β ,21-diol 3,21-disulfate // IA vs 3 HTCLs; IA vs colony form. 3 HTCLs.
1283 // N // (20*S*,22*R*)-24-methylcholesta-5,24-diene-3 β ,22-diol 3,22-disulfate // IA vs 3 HTCLs; IA vs colony form. 3 HTCLs.
1284 // N // (20*S*,22*R*)-24-methyl-5 α -cholest-24-ene-2 β ,3 α ,22-triol 3,22-disulfate // IA vs 3 HTCLs; IA vs colony form. 3 HTCLs.
- 556** Echinodermata *Patiria pectinifera* // Changdao County, China // Pectiniferosides A–J: diversified glycosides of polyhydroxy steroids isolated from the sea star *Patiria* (=Asterina) *pectinifera*
1285 // N // pectiniferoside A // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.
1286 // N // pectiniferoside B // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.
1287 // N // pectiniferoside C // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.
1288 // N // pectiniferoside D // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.
1289 // N // pectiniferoside E // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.
1290 // N // pectiniferoside F // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.

Key: Main article bibliography reference // Taxonomy // Location // Article title

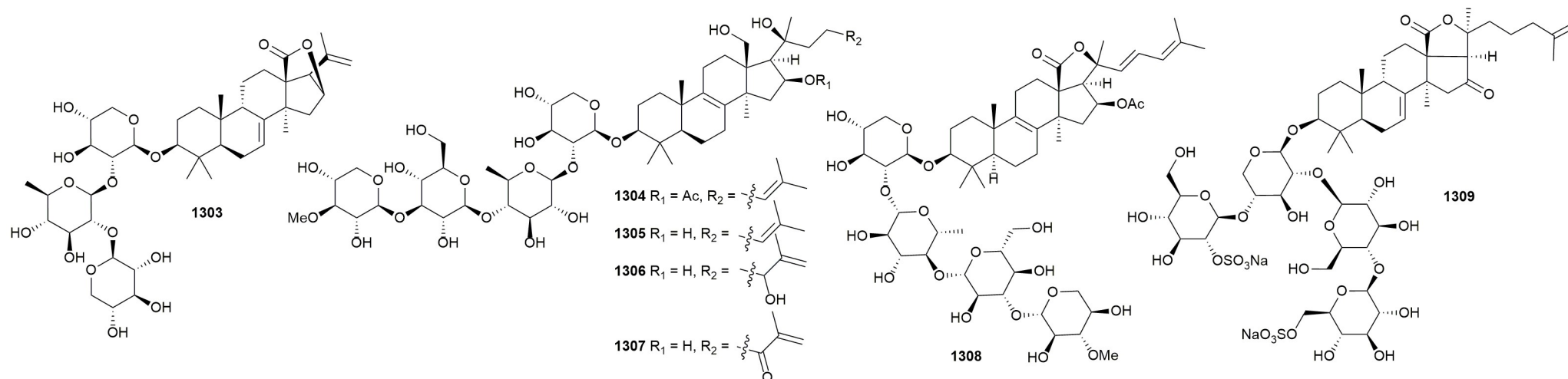
Compound number // Status // Compound name // Biological activity and Other information

10 Echinoderms

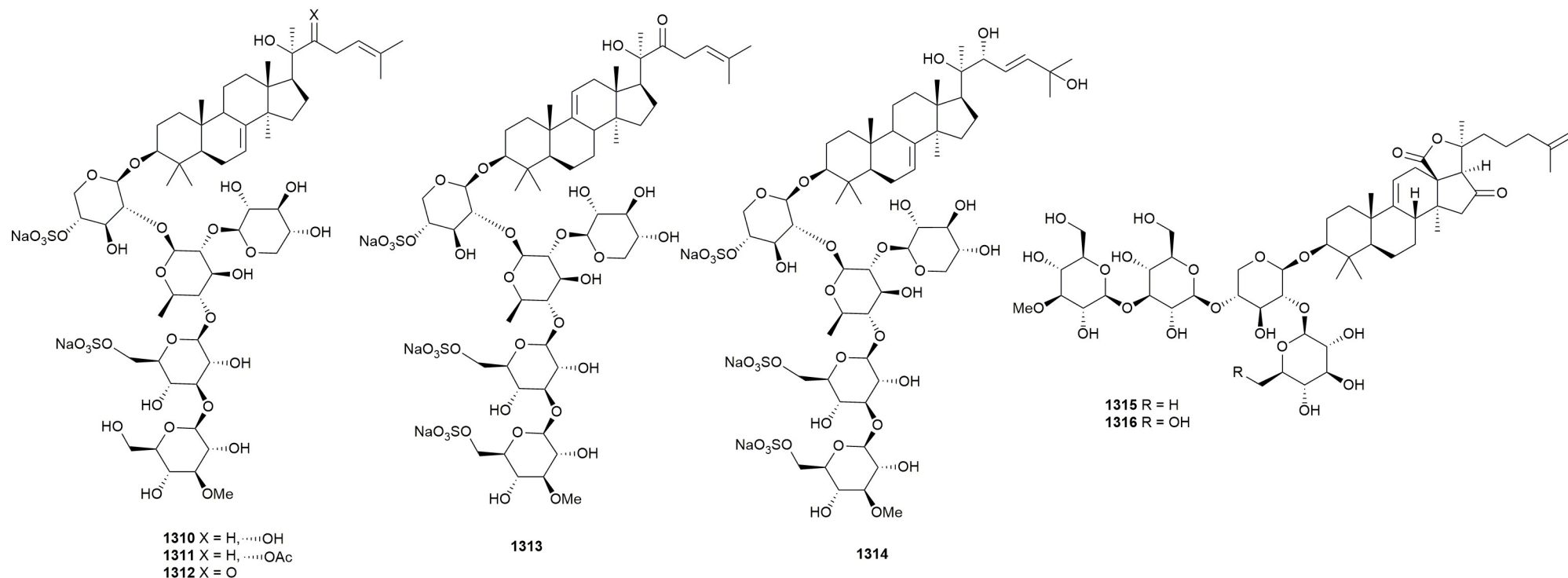
- 1291** // N // pectiniferoside G // IA vs embryo toxicity.
1292 // N // pectiniferoside H // IA vs embryo toxicity.
1293 // N // pectiniferoside I // IA vs embryo toxicity.
1294 // N // pectiniferoside J // IA vs embryo toxicity; IA vs 5 HTCLs; IA vs anti-inflam.



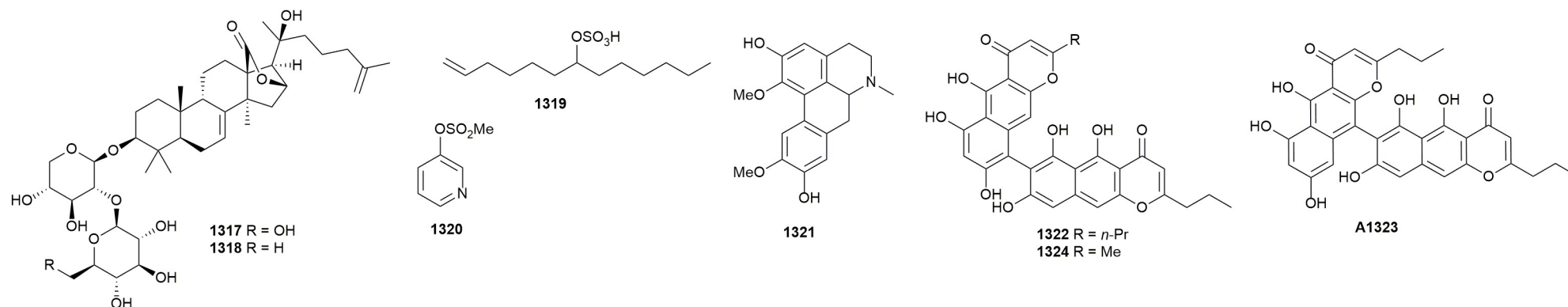
- 557** Echinodermata *Henricia leviuscula* // Urup Island, Kuril Islands, Russia // Sulfated polyhydroxysteroid glycosides from the Sea of Okhotsk starfish *Henricia leviuscula* spiculifera and potential mechanisms for their observed anti-cancer activity against several types of human cancer cells
1295 // N // spiculiferoside A // IA vs 4 HTCLs.
1296 // N // spiculiferoside B // IA vs 4 HTCLs.
1297 // N // spiculiferoside C // IA vs 4 HTCLs.
1298 // N // spiculiferoside D // IA vs 4 HTCLs.
- 558** Echinodermata *Ceramaster patagonicus* // Iturup Island, Russia // New polyhydroxysteroid glycosides with antioxidant activity from the Far Eastern sea star *Ceramaster patagonicus*
1299 // N // ceramasteroside A // IA vs anti-inflam.
1300 // N // ceramasteroside B // IA vs anti-inflam.
1301 // N // ceramasteroside D // IA vs anti-inflam.
1302 // N // ceramasteroside E // mod. inhib. nitrite release.



- 559** Echinodermata *Solaster pacificus* // Iturup Island, Sea of Okhotsk // New rare triterpene glycosides from Pacific sun star, *Solaster pacificus*, and their anticancer activity
1303 // N // pacificusoside L // IA vs 1 NCL and 2 HTCLs.
1304 // N // pacificusoside M // IA vs 1 NCL and 2 HTCLs; weak inhib. HTCL colony form. and cell migration.
1305 // N // pacificusoside N // IA vs 1 NCL and 2 HTCLs.
1306 // N // pacificusoside O // NT.
1307 // N // pacificusoside P // NT.
1308 // N // pacificusoside Q // IA vs 1 NCL and 2 HTCLs.
- 560** Echinodermata *Psolus peronii* // Avacha Bay near Starichkov Island // The composition of triterpene glycosides in the sea cucumber *Psolus peronii*: anticancer activity of the glycosides against three human breast cancer cell lines and quantitative structure–activity relationships (QSAR)
1309 // N // peronioside A // IA vs erythrocytes and 4 HTCLs.

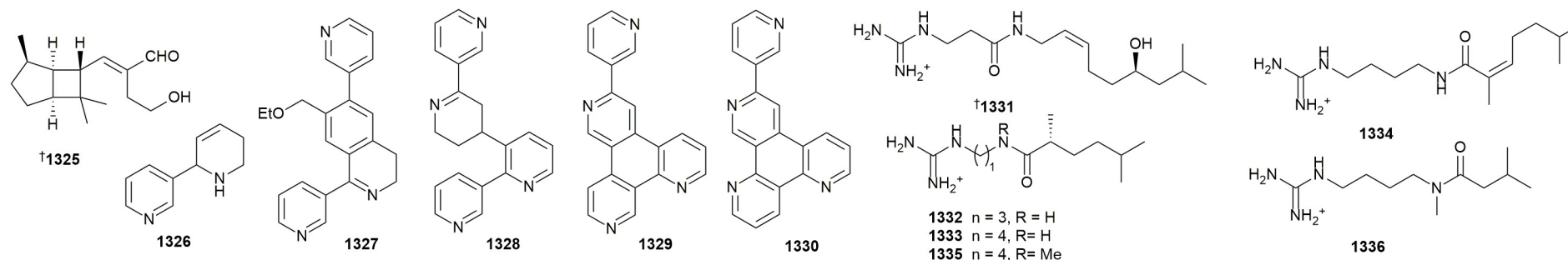


- 561** Echinodermata *Cucumaria conicospermium* // Onkotan Island, Russia // Composition of triterpene glycosides of the Far Eastern sea cucumber *Cucumaria conicospermium* Levin et Stepanov; structure elucidation of five minor conicospermiumosides A₃-1, A₃-2, A₃-3, A₇-1, and A₇-2; cytotoxicity of the glycosides against human breast cancer cell lines; structure-activity relationships
1310 // N // conicospermiumoside A₃-1 // pot. haemolytic; IA to weak vs 4 HTCLs.
1311 // N // conicospermiumoside A₃-2 // weak haemolytic; IA vs 4 HTCLs.
1312 // N // conicospermiumoside A₃-3 // pot. haemolytic; IA to weak vs 4 HTCLs.
1313 // N // conicospermiumoside A₇-1 // pot. haemolytic; IA to weak vs 4 HTCLs.
1314 // N // conicospermiumoside A₇-2 // IA haemolytic; IA vs 4 HTCLs.
- 562** Echinodermata *Apostichopus japonicus* // Yellow Sea // Triterpene glycosides from the viscera of sea cucumber *Apostichopus japonicus* with embryotoxicity
1315 // N // 3β-O-{2-O-[β-D-quinovopyranosyl]-4-O-[3-O-methyl-β-D-glucopyranosyl-(1→3)-β-D-glucopyranosyl]-β-D-xylopyranosyl}-holosta-9(11),25(26)-dien-16-one // pot. zebrafish embryotoxicity.
1316 // N // 3β-O-{2-O-[β-D-glucopyranosyl]-4-O-[3-O-methyl-β-D-glucopyranosyl-(1→3)-β-D-glucopyranosyl]-β-D-xylopyranosyl}-holosta-9(11), 25(26)-dien-16-one // pot. zebrafish embryotoxicity.



- 563** Echinodermata *Apostichopus japonicus* // Yellow sea // Sea cucumber viscera contains novel non-holostane-type glycoside toxins that possess a putative chemical defense function
1317 // N // 3 β -O-[β -D-glucopyranosyl-(1 $\rightarrow$ 2)- β -D-xylopyranosyl]-(20*S*)-hydroxylanosta-7,25-diene-18(16)-lactone // IA vs zebrafish development.
1318 // N // 3 β -O-[β -D-quinovopyranosyl-(1 $\rightarrow$ 2)- β -D-xylopyranosyl]-(20*S*)-hydroxylanosta-7,25-diene-18(16)-lactone // IA vs zebrafish development.
- 564** Echinodermata *Clypeaster humilis* // Hurghada, Egypt // Antiviral activity of sulphated specialized metabolites from sea urchin *Clypeaster humilis*: in vitro and in silico studies
1319 // N // (7*R*) tridec-1-en-7-yl hydrogen sulphate // IA vs 1 virus strain.
1320 // M // pyridine-3-yl methane sulfonate // IA vs 1 virus strain.
1321 // M // boldine // NT.
- 565** Echinodermata *Phanogenia gracilis* // South China Sea near Ly Son Island // Phanogracilins A–C, new bibenzochromenones of crinoid *Phanogenia gracilis* (Hartlaub, 1890)
1322 // N // phanogracilin A // XRD; IA vs antioxid.; IA vs 2 bact. strain; IA vs 1 fungus; IA vs bacterial biofilm.
1323 // N // phanogracilin B // IA vs antioxid.; IA vs 2 bact. strain; IA vs 1 fungus; IA vs bacterial biofilm.
1324 // N // phanogracilin C // weak antioxid.; IA vs 2 bact. strain; IA vs 1 fungus; IA vs bacterial biofilm.

11 Miscellaneous



- 575** * // *// Enantioselective hydrofunctionalization of cyclobutenones: total synthesis of gem-dimethylcyclobutane natural products
1325 // R // (–)-raikovenal // total synth. achieved; abs. config. by synth.
- 580** Nemertea *Amphiporus angulatus* // Eastport, Maine, USA // New pyridyl and dihydroisoquinoline alkaloids isolated from the chevron nemertean *Amphiporus angulatus*
1326 // N // isoanatabine // NT.
1327 // N // angulatine // NT.
1328 // N // tetrahydronemertelline // NT.
1329 // N // dehydronemertelline A // NT.
1330 // N // dehydronemertelline B // NT.
- 581** Sipuncula *Phascolosoma granulatatum* // Newquay, Co. Clare, Ireland // Highly concentrated linear guanidine amides from the marine sipunculid *Phascolosoma granulatatum*
1331 // N // phascolosomine A // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.
1332 // N // phascolosomine B // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.
1333 // N // phascolosomine C // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.
1334 // N // phascolosomine D // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.
1335 // N // phascolosomine E // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.
1336 // N // phascolosomine F // IA vs *A. salina*; IA vs 5 HTCLs; IA vs 6 fungal strains; IA vs 5 bact. strains.

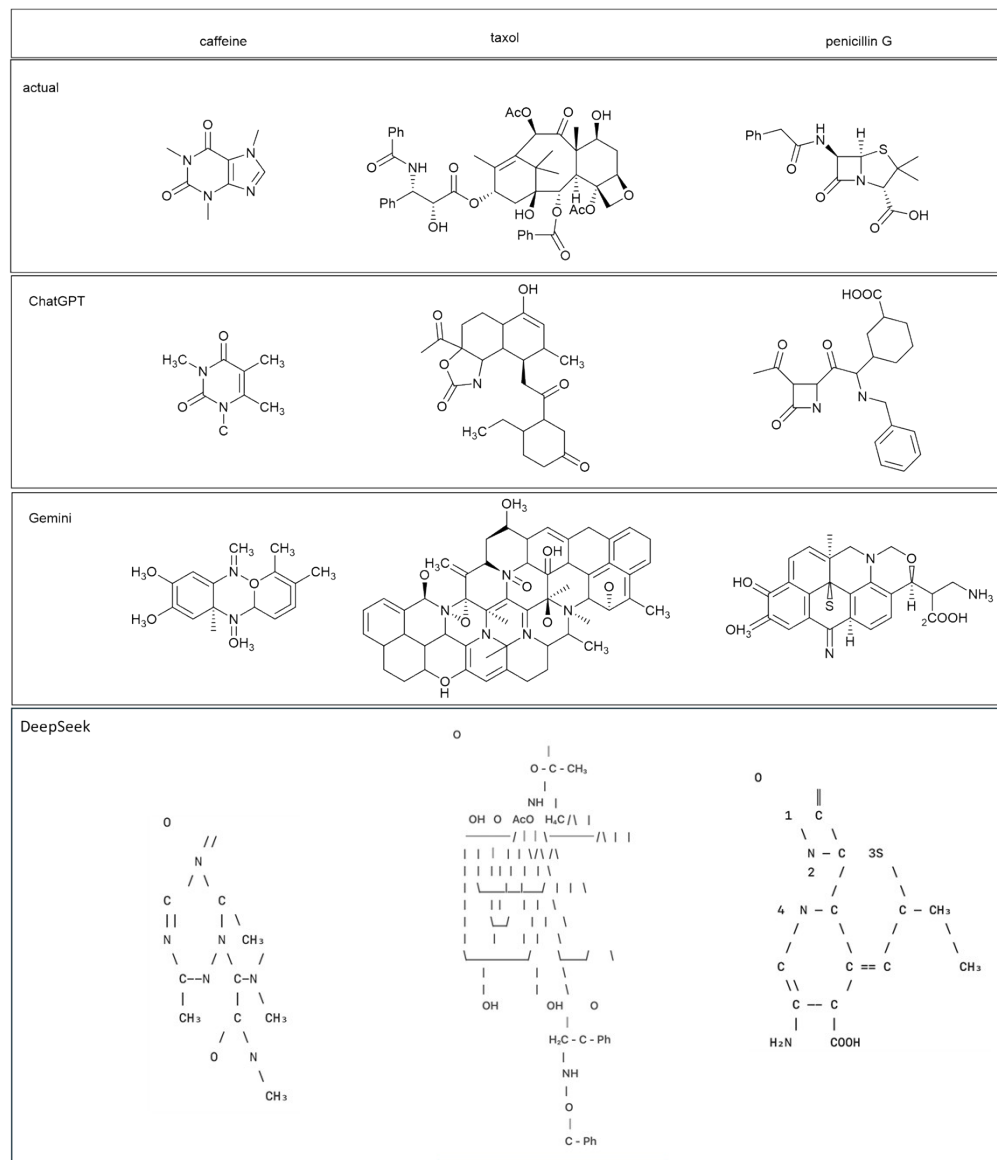


Figure S1. Structures of natural products caffeine, paclitaxol and penicillin G generated by GAI applications, ChatGPT, Gemini and DeepSeek

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Table S1: List of Keywords, grouped keywords (Thesaurus) and number of papers using the keywords

Keyword	Thesaurus	Number of Papers	Keyword	Thesaurus	Number of Papers
alkaloid	alkaloid	1378	brown algae	biota	302
AI	artificial intelligence	2	chlorophyta	biota	34
algorithm	artificial intelligence	34	coral	biota	826
artificial intelligence	artificial intelligence	17	cyanobacteria	biota	529
automation	artificial intelligence	4	dinoflagellate	biota	287
convolutional network	artificial intelligence	5	echinoderm	biota	86
deep learning	artificial intelligence	4	green algae	biota	113
deep-learning	artificial intelligence	2	mangrove	biota	600
image analysis	artificial intelligence	3	mollusc	biota	128
intelligence	artificial intelligence	19	ochrophyta	biota	11
learning	artificial intelligence	43	red algae	biota	273
machine learning	artificial intelligence	19	rhodophyta	biota	47
machine-learning	artificial intelligence	4	sponge	biota	1705
neural network	artificial intelligence	8	tunicate	biota	115
ontology	artificial intelligence	16	cheminformatic	cheminformatic	16
SMART	artificial intelligence	5	chemoinformatic	cheminformatic	11
binding	binding	881	computation	compute	290
activity	bioactivity	7657	computer	compute	50
bioactivity	bioactivity	2348	culture	cultured	1381
inhibit	bioactivity	4246	actinomycete	cultured biota	541
network pharmacology	bioactivity	15	aspergillus	cultured biota	682
screen	bioactivity	894	bacteria	cultured biota	1575
tox	bioactivity	4286	fungus	cultured biota	1614
bioinformatic	bioinformatic	156	penicillium	cultured biota	578
biosynthesis	biosynthetic gene cluster	795	proteobacteria	cultured biota	53
biosynthetic cluster	biosynthetic gene cluster	13	database	database	234
biosynthetic gene cluster	biosynthetic gene cluster	319	library	database	229
cluster	biosynthetic gene cluster	561	marinlit	database	5
gene cluster	biosynthetic gene cluster	450	web	database	103
ascidian	biota	132	deep sea	deepsea	71

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Keyword	Thesaurus	Number of Papers	Keyword	Thesaurus	Number of Papers
deepsea	deepsea	6	new compound	new compound	858
deep-sea	deepsea	317	HMBC	NMR	81
density	density functional theory	239	HSQC	NMR	70
density functional	density functional theory	150	NMR	NMR	2868
DFT	density functional theory	283	novel	novel	2256
ECD	density functional theory	1071	unprecedented	novel	344
dereplication	dereplication	86	orphan	orphan	17
dock	dock	589	pattern	pattern	243
enzyme	enzyme	1008	peptide	peptide	1674
genome mining	genome mining	136	polyketide	polyketide	799
genome-mining	genome mining	9	predict	predict	422
IN SILICO	in silico	233	protein	protein	1920
informatic	informatic	189	nuclear	receptor	336
LC MS	mass spectrometry	25	receptor	receptor	606
LC-MS	mass spectrometry	262	pattern recognition	recognition	2
Mass spect	mass spectrometry	1031	recognition	recognition	52
model	model	1170	rhizosphere	sediment	118
global natural	molecular network	27	sediment	sediment	368
GNPS	molecular network	46	synthesis	synthesis	4217
molecular network	molecular network	164	terpene	terpene	1990
network	molecular network	286	virtual	virtual screening	99
			virtual screening	virtual screening	63

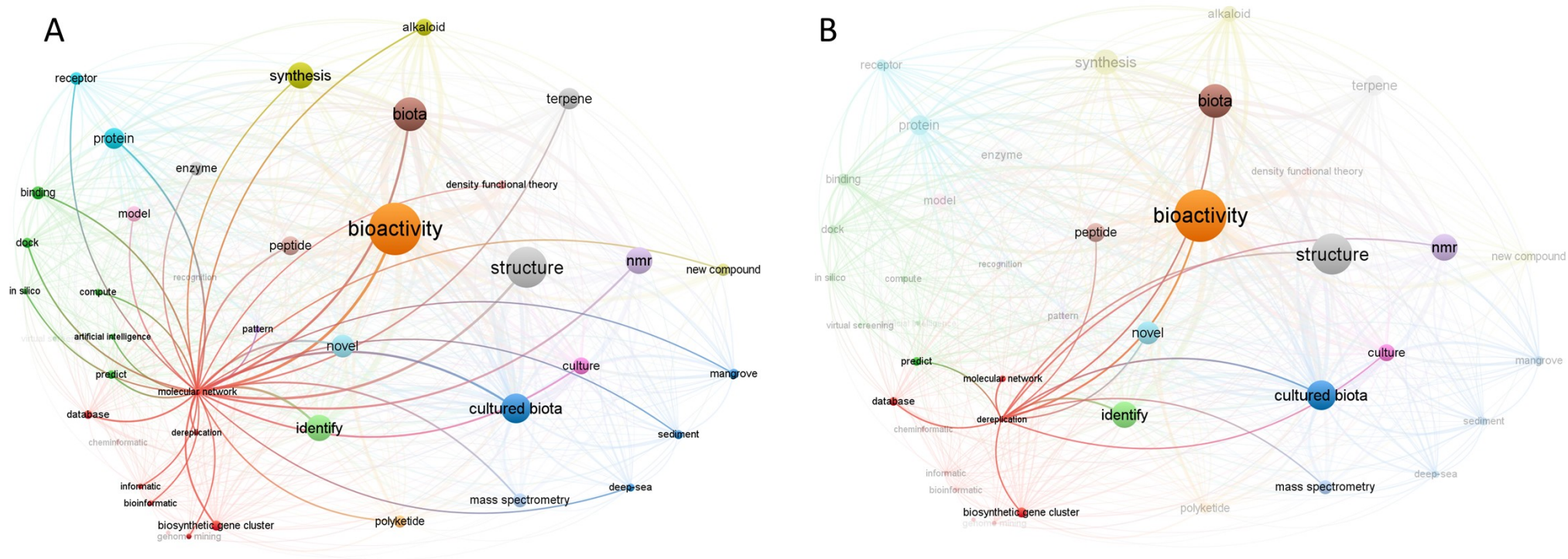


Figure S2. Network cluster analysis of keywords obtained from 13582 papers associated with studies of marine natural products published between January 2015 and December 2024. A molecular network; B dereplication

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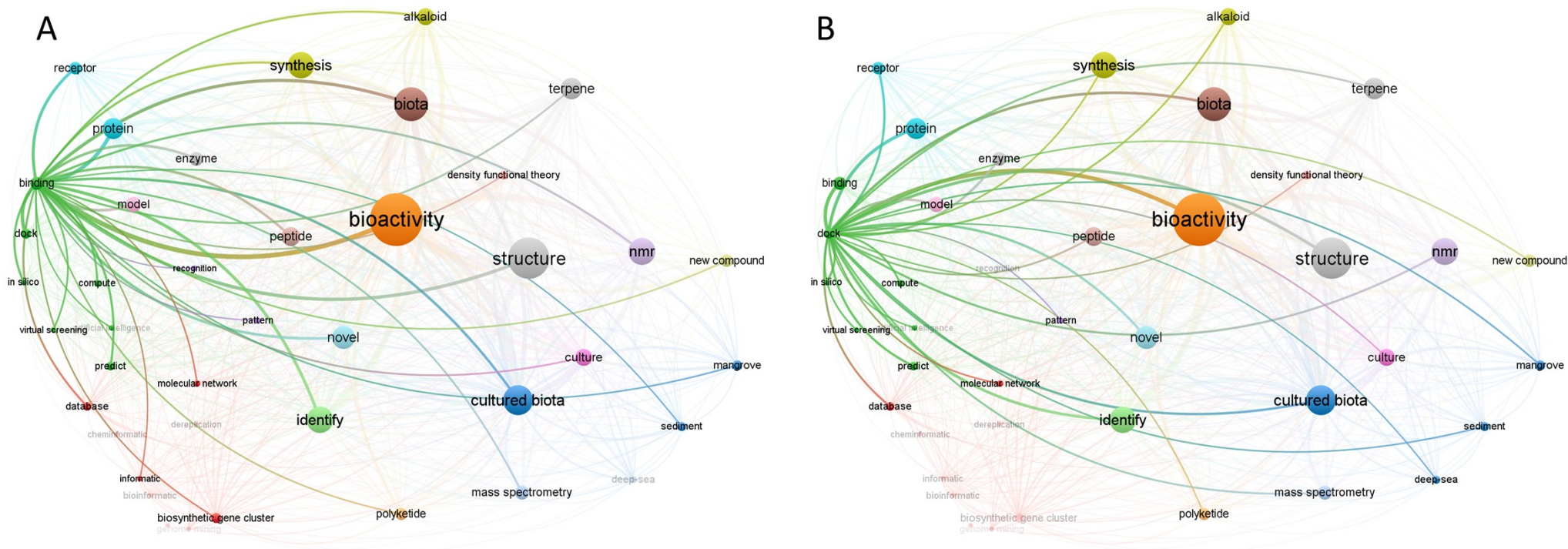


Figure S3. Network cluster analysis of keywords obtained from 13582 papers associated with studies of marine natural products published between January 2015 and December 2024. A binding; B dock

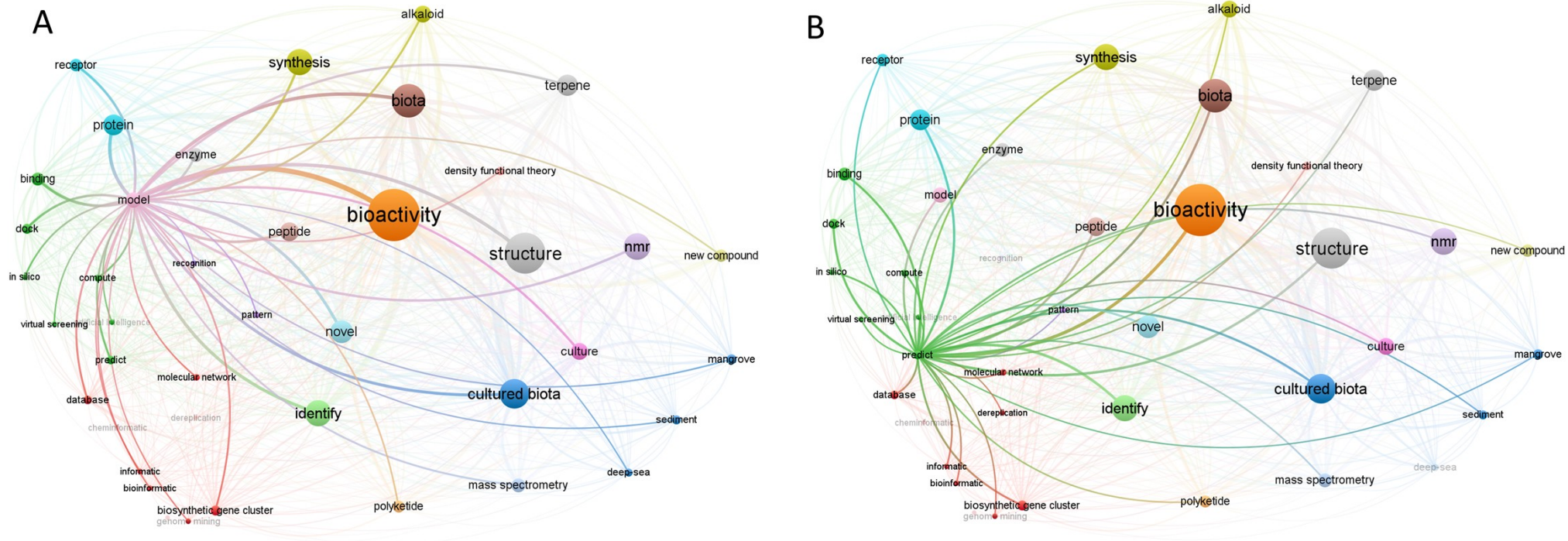


Figure S4. Network cluster analysis of keywords obtained from 13582 papers associated with studies of marine natural products published between January 2015 and December 2024. A model; B predict

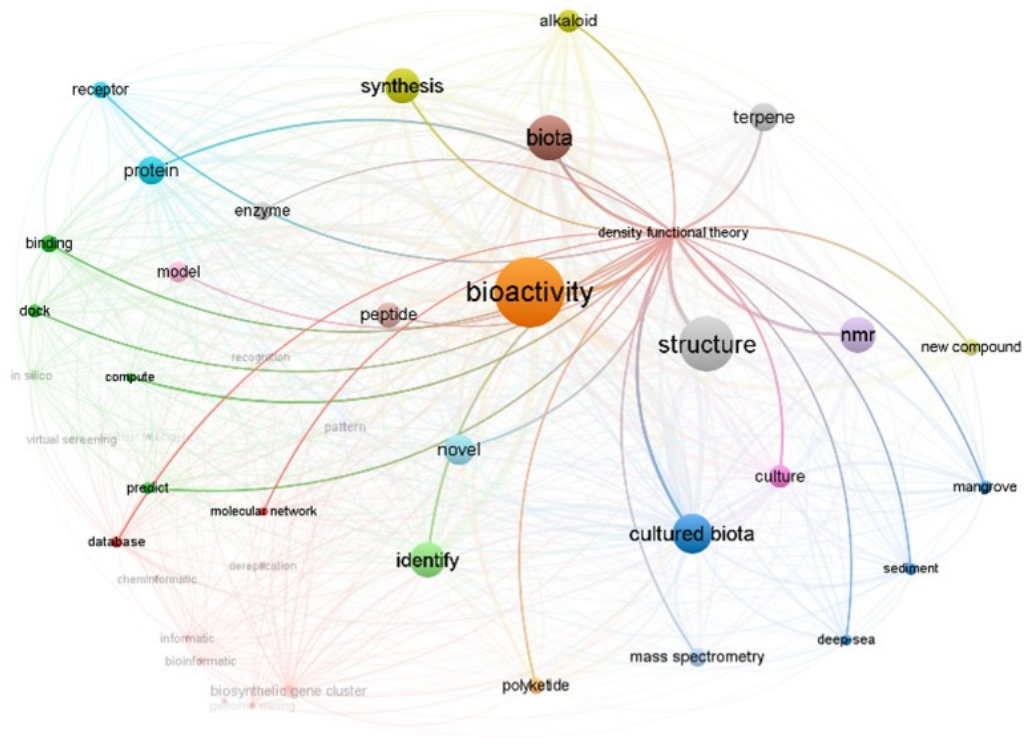


Figure S5. Network cluster analysis of keyword (density functional theory) obtained from 13582 papers associated with studies of marine natural products published between January 2015 and December 2024.