Research Progress of Meliaceous Limonoids from 2011 to 2021

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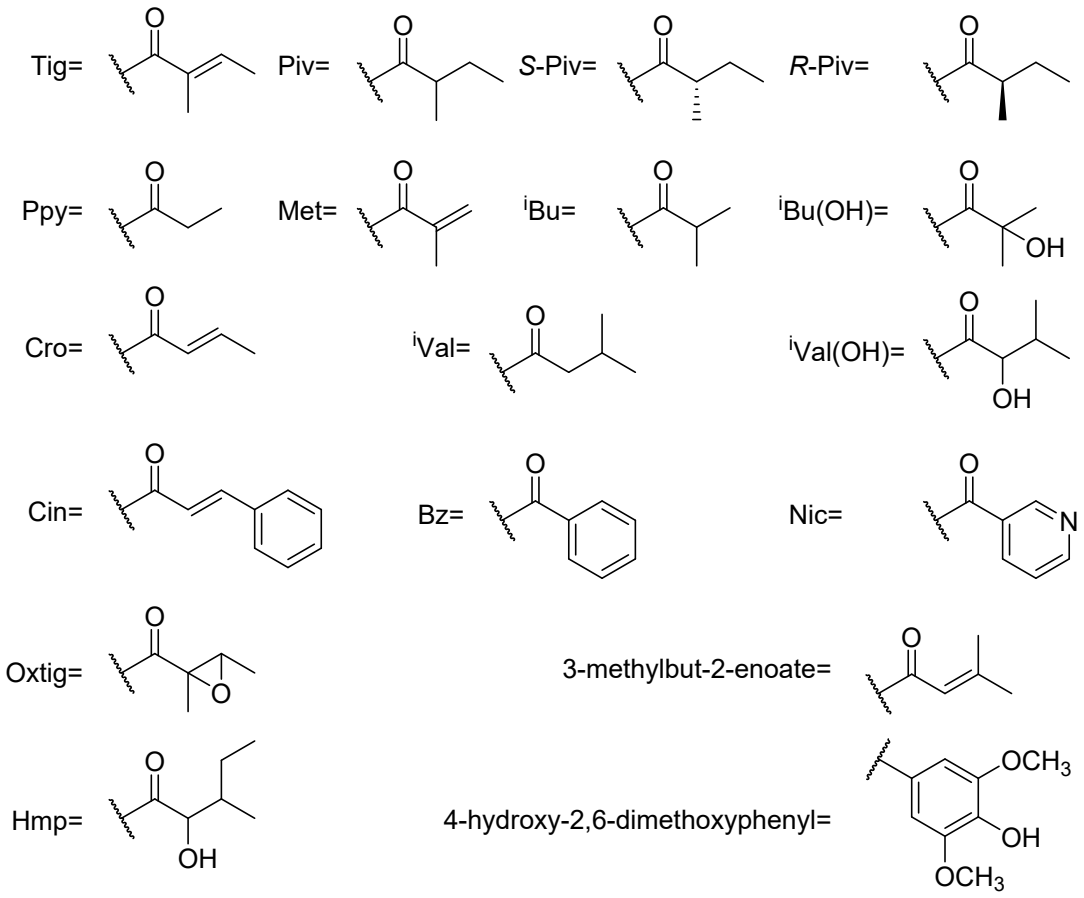
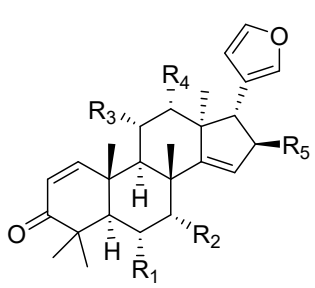


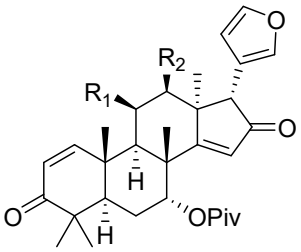
Fig. S1 Structural abbreviations used in the review.

S1 New limonoids with known skeletons

S1.1 Ring intact limonoids (A1-A223)



A1-A3



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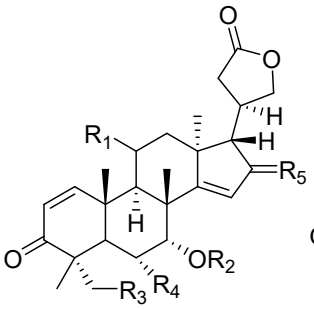

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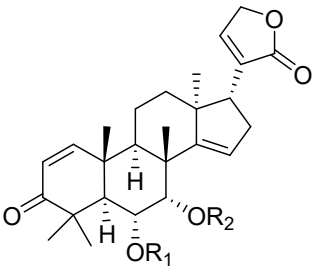

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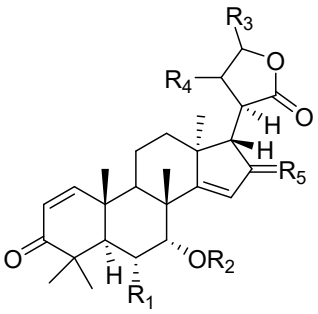

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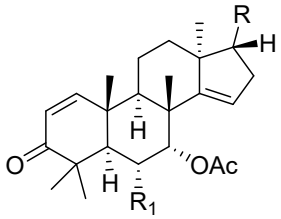
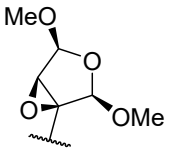


A22 R=A1 R1=OAc
A23 R=A2 R1=OAc
A24 R=A3 R1=OAc
A25 R=A3 R1=H
A26 R=A4 R1=OH
A27 R=A5 R1=OH
A28 R=A6 R1=H



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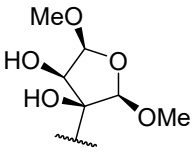

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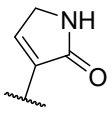

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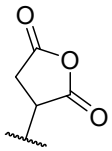

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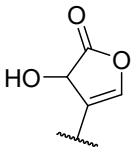

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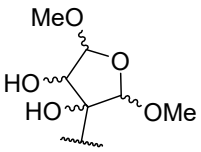

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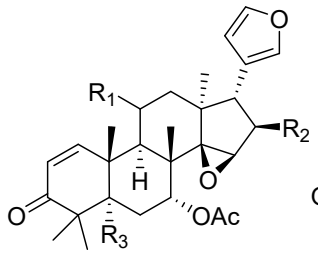

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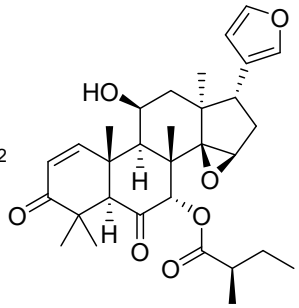

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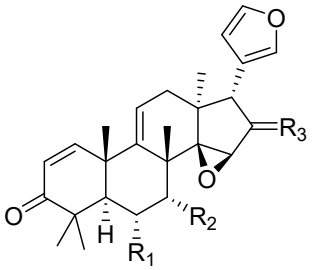

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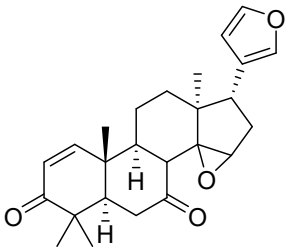

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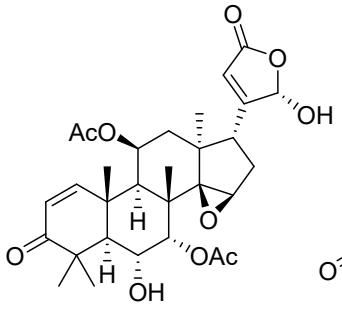

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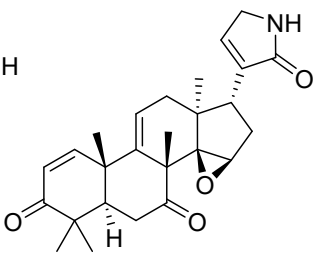

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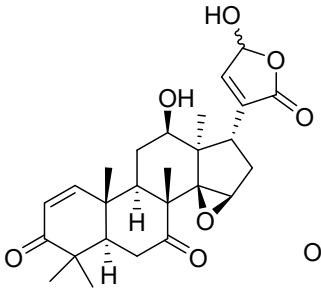

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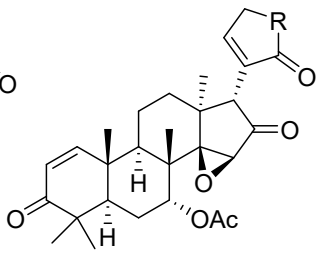


A40-A41

Figure S1.1 Structures of azadirone-class limonoids **A1-A41**

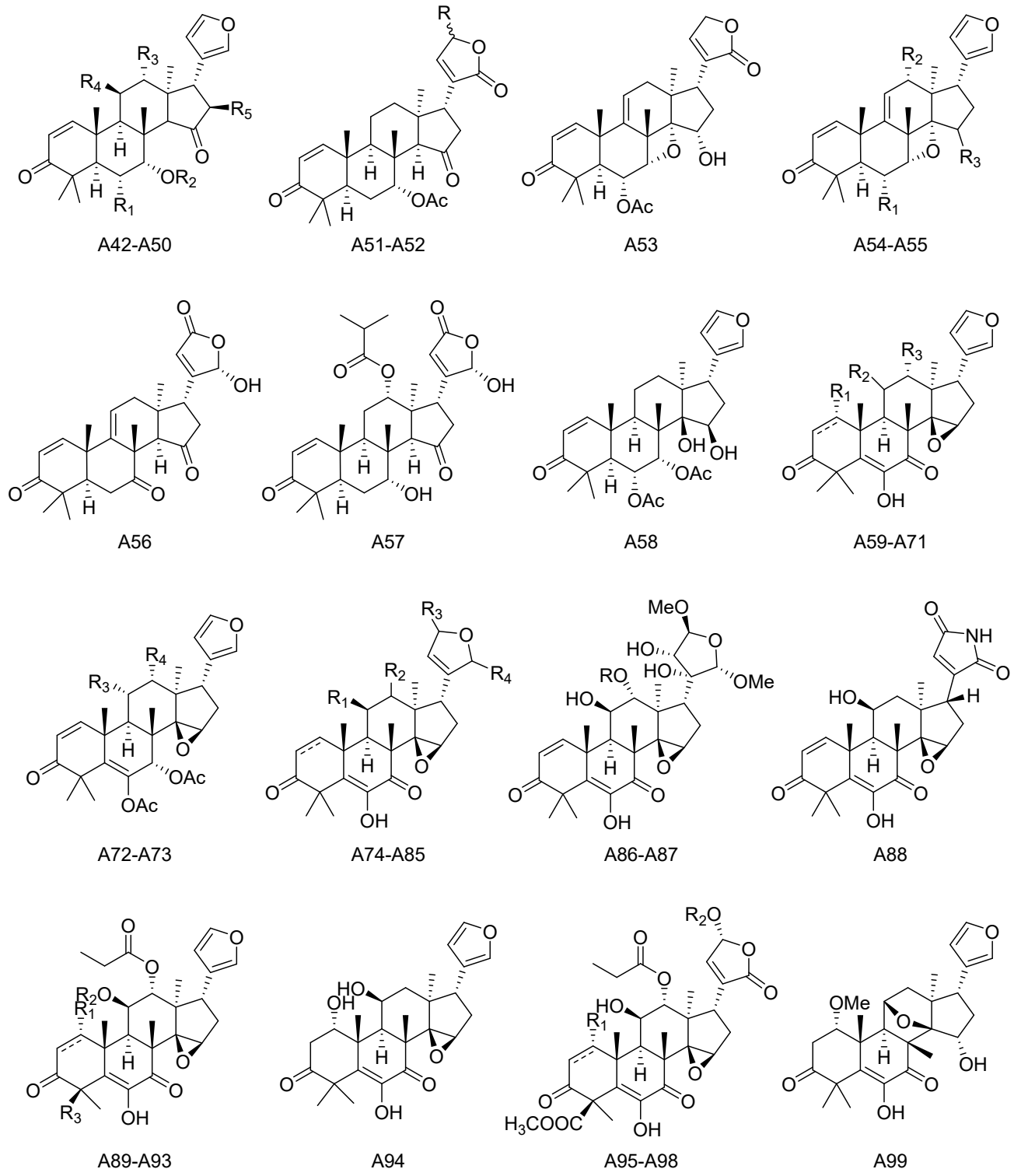


Figure S1.2 Structures of cedrelone-class limonoids **A42-A99**

Table S1.1 Structures and sources of azadirone- and cedrelone-class limonoids **A1-A99**

no	Compounds	Substitution groups and others	Sources	Bioactivity
A1	16*β*-hydroxydysobinin	R_1= R_2=OAc; R_3= R_4=H; R_5=OH	*Chisocheton macrophyllus*[79]	Cytotoxicity
A2	toonayunnanae H	R_1=H; R_2=OAc; R_3=R_4=OH; R_5=H	*Toona ciliata*[80]	

A3	7-benzoyl-17-epinimbocinol	R_1= R_3=R_4=H; R_2=OBz; R_5=O	*Azadirachta indica*[81]	
A4	cochinchinoid H	R_1=OAc; R_2=H	*Walsura cochinchinensis*[82]	11β-HSD1 inhibitory
A5	cochinchinoid I	R_1=H; R_2= OAc	*W. cochinchinensis*[82]	
A6	11α-acetoxy-20,21,22,23-tetrahydro-23-oazadirone	R_1=α-OAc; R_2=Ac; R_3=H	*Chukrasia tabularis* [56]	
A7	hainanxylogranin V	R_1=α-OH; R_2=Ac; R_3=R_4=R_5=H	*Xylocarpus granatum*[84]	CES2 inhibitory
A8	hainanxylogranin W	R_1=β-OH; R_2=Ac; R_3=R_4=R_5=H	*X. granatum*[84]	CES2 inhibitory
A9	swieteliacate A	R_1= R_3=R_4=R_5=H; R_2=β-D-glu;	*Swietenia macrophylla*[85]	
A10	swieteliacate B	R_1= R_4=R_5=H; R_2=β-D-glu; R_3=OH;	*S. macrophylla*[85]	Cytotoxicity
A11	andirolide Q	R_1= R_3= R_4=H; R_2=Ac; R_5=O	*Carapa guianensis*[85]	
A12	munronoid I	R_1= R_3 =R_5=H; R_2=Ac; R_4=OAc;	*Munronia unifoliolata*[87]	
A13	chisosiamen E	R_1= R_2=Ac	*Chisocheton siamensis*[88]	Anti-inflammatory ;Anti-multidrug resistance
A14	(5R,6R,7S,13S,17R)-6-hydroxy-7-(benzoyloxy)-21,23-epoxy- 4,4,8trimethyl-24-norchola-1,14,20,22-tetraene-3-one	R_1=H; R_2=Bz	*Azadirachta indica*[89]	Cytotoxicity
A15	azadiraindin F	R_1=H; R_2=Ac; R_3=OMe; R_4=OH; R_5=O	*Azadirachta indica*[90]	
A16	xylomolin M	R_1= R_3=R_4=H; R_2=Ac; R_5=O	*Xylocarpus moluccensis*[207]	
A17	pentandricine B	R_1 = R_3=R_4=R_5=H; R_2=Ac	*Chisocheton pentandrus*[92]	
A18	pentandricine C	R_1= R_2= R_3=R_4=R_5=H	*C. pentandrus*[92]	
A19	pentandricine D	R_1=OAc; R_2=Ac; R_3=R_4=R_5=H	*C. pentandrus*[92]	
A20	chisosiamen A	R_1=OH; R_2=Ac; R_3=β-OMe; R_4=β-OH; R_5=H	*C. siamensis*[88]	Anti-multidrug resistance
A21	chisosiamen B	R_1=OAc; R_2=Ac; R_3=β-OMe; R_4=β-OH; R_5=H	*C. siamensis*[88]	Anti-multidrug resistance
A22	chisosiamen C		*C. siamensis*[88]	
A23	chisosiamen D		*C. siamensis*[88]	
A24	6α,7α-diacetoxy-3-oxo-24,25,26,27-tetranorapotirucalla-1,14,20(22)-trien-21,23-lactam	R=OAc	*C. paniculatus*[93]	Anti-Inflammatory

A25	toonasinemine B	R=H	*Toona sinensis*[94]	Anti-Inflammatory
A26	24,25,26,27-tetranor-apotirucall-6α-hydroxy-7αacetoxy-1,14-dien-3-one-21,24-anhydride		*Azaridachta indica*[95]	Cytotoxicity
A27	24,25,26,27-tetranor-apotirucall-6α,22-dihydroxy-7α-acetoxy1,14,20(21)-trien-3-one-21,23-olide		*A. indica*[95]	
A28	7-O-acetyl-7-O-debenzoyl-22 -hydroxy-21-methoxylimocinin		*A. indica*[96]	Melanogenesis-inhibitory
A29	toonasinenoid E	R_1=H; R_2= R_3=OH	*Toona sinensis*[97]	Neuroprotective
A30	toonasinenoid D	R_1=O; R_2=H; R_3=OH	*T. sinensis*[97]	Neuroprotective
A31	entangolensin O	R_1=*β*-OAc; R_2=OH; R_3=H	*Entandrophragma angolense*[98]	Cytotoxicity
A32	walsurin A		*Walsura robusta*[99]	Anti-Multidrug resistance
A33	ciliatasecone X	R_1=H, R_2=OAc; R_3=H	*Toona ciliata* var. *yunnanensis* [100]	
A34	ciliatasecone Y	R_1=OH, R_2=O; R_3=H	*T. ciliata* var. *yunnanensis* [100]	
A35	toonayunnanin A	R_1=H; R_2=O; R_3=O	*T. ciliata* var. *yunnanensis*[101]	
A36	dysoxylumin C		*Dysoxylum densiflorum*[109]	Antibacterial; Cytotoxicity
A37	yunnanolide B		*Walsura yunnanensis*[102]	
A38	toononoid H		*Toona ciliata*[103]	
A39	trigilgianin		*Trichilia gilgiana*[104]	Antileishmanial
A40	azadiraindin E	R=O	*Azadirachta indica*[90]	
A41	toonasinemine A	R=NH	*Toona sinensis*[94]	Cytotoxicity；Anti-Inflammatory
A42	dysoxylumosin J	R_1=OAc; R_2=R_3=R_4=R_5=H	*Dysoxylum mollissimum*[105]	
A43	dysoxylumosin K	R_1=OH; R_2=Ac; R_3=R_4=R_5=H	*D. mollissimum*[105]	
A44	dysoxylumosin L	R_1=O; R_2=H; R_3=Piv; R_4=R_5=H	*D. mollissimum*[105]	
A45	walsurin C	R_1=O; R_2=H; R_3=OAc; R_4=R_5=H	*Walsura robusta*[99]	
A46	walsurin E	R_1=H; R_2=Ac; R_3=R_4=R_5=H	*W. robusta*[99]	
A47	hainanxylogranin X	R_1= R_3=R_4=H; R_2=Ac; R_5=OAc	*Xylocarpus granatum*[84]	

A48	toonayunnanin B	R_1=R_2= R_4=R_5=H; R_3=O^{i}Bu	*Toona ciliata* var. *yunnanensis* [101]	Cytotoxicity
A49	toonaciliatone F	R_1=OAc; R_2=Ac; R_3=R_4=R_5=H	*T. ciliate* var. *yunnanensis*[112]	
A50	ciliatasecone W	R_1= R_5=H; R_2=Ac; R_3= R_4=OH	*T. ciliata* var. *yunnanensis* [100]	
A51	ciliatasecone U	R=H	*T. ciliata* var. *yunnanensis* [100]	
A52	ciliatasecone V	R=OH	*T. ciliata* var. *yunnanensis* [100]	
A53	ciliatasecone T		*T. ciliata* var. *yunnanensis*[100]	
A54	ciliatasecone S	R_1=OAc; R_2=H; R_3=*α*-OH	*T. ciliata* var. *yunnanensis*[100]	
A55	toonayunnanae F	R_1=H; R_2=OAc; R_3=*β*-OH	*T. ciliata*[80]	Anti-Inflammatory
A56	toonaone B		*T. ciliata*[106]	
A57	toonaone C		*T. ciliata*[106]	Anti-inflammatory
A58	dysobinol		*Chisocheton macrophyllus*[107]	
A59	dysoxylumosin G	R_1=OMe; R_2=*β*-OAc; R_3=H	*Dysoxylum mollissimum*[105]	
A60	dysoxylumosin H	R_1=H; R_2=*α*-OH; R_3=*S*-OPiv; $\Delta^{1,2}$	*D. mollissimum*[105]	
A61	dysoxylumosin I	R_1=H; R_2=*α*-OH; R_3=*R*-OPiv; $\Delta^{1,2}$	*D. mollissimum*[105]	
A62	walsurauia A	R_1=H; R_2=*α*-OTig; R_3=H; $\Delta^{1,2}$	*Walsura yunnanensis*[110]	Cytotoxicity
A63	walsurauia B	R_1=H; R_2=*α*-OPiv; R_3=H; $\Delta^{1,2}$	*W. yunnanensis*[110]	Cytotoxicity
A64	walsunoid H	R_1= R_3=H; R_2=*β*-OAc; $\Delta^{1,2}$	*W. robusta*[111]	11*β*-HSD1-inhibitory
A65	12*α*-acetoxycedrelone	R_1=R_2=H; R_3=OAc; $\Delta^{1,2}$	*W. robusta*[99]	
A66	11-oxo-dihydrocedrelone	R_1= R_2= R_3=H; $\Delta^{1,2}$	*W. robusta*[99]	
A67	1*α*-methoxy-12*α*-acetoxydihydrocedrelone	R_1=OMe; R_2=H; R_3=OAc	*W. robusta*[99]	
A68	1*α*-methoxy-11*β*-hydroxydihydrocedrelone	R_1=OMe; R_2=*β*-OH; R_3=H	*W. robusta*[99]	Anti-Multidrug resistance
A69	1*α*-ethoxy-11*β*-hydroxydihydrocedrelone	R_1=OEt; R_2=*β*-OH; R_3=H	*W. robusta*[98]	Anti-Multidrug resistance
A70	toonasinenoid C	R_1=OH; R_2=*β*-OAc; R_3=H	*Toona sinensis*[97]	Neuroprotective
A71	toonaciliatone B	R_1= R_3=H; R_2=O; $\Delta^{1,2}$	*T. ciliate*[112]	
A72	toonaciliatone D	R_1=OH; R_2=H	*T. ciliate*[112]	
A73	toonaciliatone E	R_1=H; R_2=OH	*T. ciliate*[112]	
A74	walsunoid B	R_1=OH; R_2=H; R_3=*α*-OMe; R_4=O; $\Delta^{1,2}$	*Walsura robusta*[111]	
A75	walsunoid C	R_1=OH; R_2= R_3=H; R_4=O; $\Delta^{1,2}$	*W. robusta*[111]	
A76	walsunoid D	R_1=OH; R_2=H; R_3=*β*-OMe; R_4=O	*W. robusta*[111]	
A77	walsunoid E	R_1=OH; R_2=R_3=H; R_4=O	*W. robusta*[111]	
A78	walsunoid F	R_1=OAc; R_2=H; R_3=O; R_4=OH; $\Delta^{1,2}$	*W. robusta*[111]	
A79	walsunoid G	R_1=OAc; R_2=H; R_3=O; R_4=OH	*W. robusta*[111]	

A80	12*α*-diacetoxywalsuranolide	R_1=OAc; R_2=OAc; R_3=OH; R_4=O	*Turraea abyssinica*[113]	Contact toxicity
A81	walsurauia C	R_1=OH; R_3=H; R_2=*β*-OAc; R_4=O; $\Delta^{1,2}$	*Walsura yunnanensis*[110]	Cytotoxicity
A82	walsuranolide B	R_1=OH; R_2= R_3=H; R_4=O; $\Delta^{1,2}$	*W. yunnanensis*[102]	
A83	11*β*-hydroxy-23-O-methylwalsuranolide	R_1=OH; R_2=H; R_3=OMe; R_4=O; $\Delta^{1,2}$	*W. yunnanensis*[102]	
A84	yunnanolide A	R_1=OH; R_2=H; R_3=*β*-OMe; R_4=*α*-OMe; $\Delta^{1,2}$	*W. yunnanensis*[102]	Cytotoxicity
A85	11*β*-hydroxyisowalsuranolide	R_1=OH; R_2=H; R_3=O; R4=*α*-OH; $\Delta^{1,2}$	*W. yunnanensis*[102]	Cytotoxicity
A86	yunnanol A	R=H	*W. yunnanensis*[102]	
A87	curcinomarcoide	R=^{i}Bu	*Trichilia hirta* [114]	
A88	walsunoid I		*Walsura robusta*[111]	
A89	1α-hydroxy-1,2-dihydrohirtin	R_1=OH; R_2=Ac; R_3=COOMe	*Trichilia americana*[115]	Cytotoxicity
A90	1α-methoxy-1,2-dihydrodeacetylhirtin	R_1=OMe; R_2=H; R_3=COOMe	*T. americana*[115]	Cytotoxicity
A91	11β-hydroxy-12α-propanoyloxycedrelone	R_1=R_2=H; R_3=COOMe; $\Delta^{1,2}$	*T. americana*[115]	Cytotoxicity
A92	1,2-dihydrodeacetylhirtin	R_1=R_2=H; R_3=COOMe	*T. americana*[115]	
A93	1*α*-hydroxy-1,2-dihydrodeacetylhirtin	R_1=OH; R_2=H; R_3=Me	*T. americana*[115]	Cytotoxicity
A94	1*α*,11*β*-dihydroxy-1,2-dihydrocedrelone		*T. americana*[115]	Cytotoxicity
A95	americanolide A	R_1= OH; R_2=Me	*T. americana*[115]	
A96	americanolide B	R_1= OMe; R_2=Me	*T. americana*[115]	
A97	americanolide C	R=H; R_2=Me; $\Delta^{1,2}$	*T. americana*[115]	
A98	americanolide D	R_1=OH; R_2=H	*T. americana*[115]	
A99	dysoxylumosin M		*Dysoxylum mollissimum*[105]	

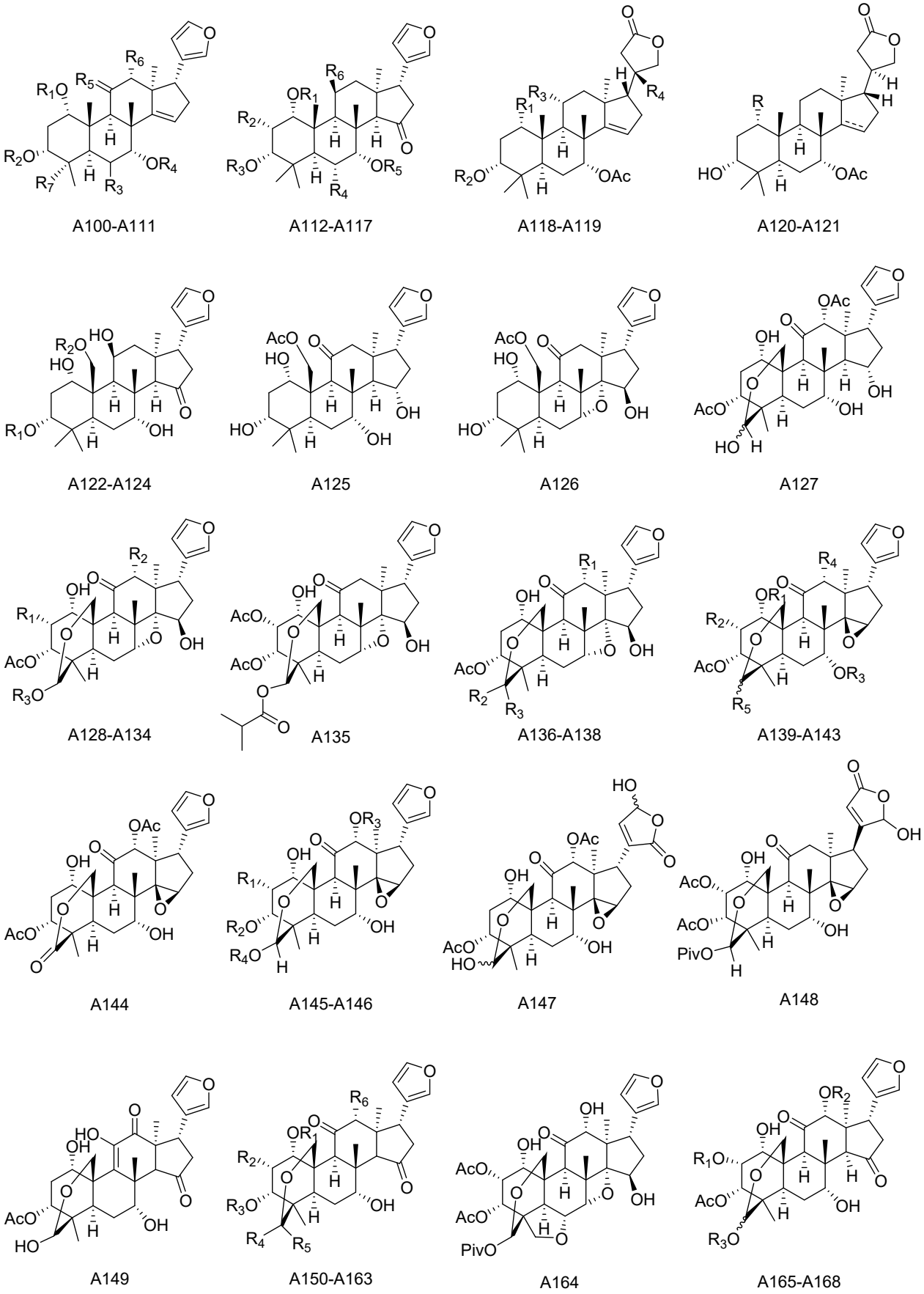


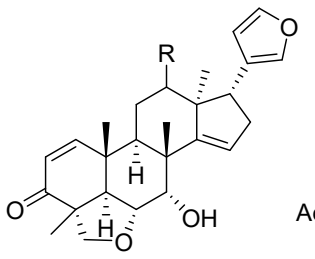
Figure S1.3 Structures of havanensin-class, **A100-A121**, and trichilin-class limonoids **A122-A168**

Table S1.2 Structures and sources of havanensin-class, **A100-A121**, and trichilin-class limonoids **A122-A168**

no	Compounds	Substitution groups and others	Sources	Bioactivity
A100	meliazedarine I	R_1=R_5=H; R_2=Ac; R_3=*α*-OAc; R_4=Bz; R_6=OAc; R_7=CHO	*Melia azedarach*[116]	
A101	trichilinin M	R_1=R_5=H; R_2=Ac; R_3=*β*-OH; R_4=Bz; R_6=OAc; R_7=CHO	*M. azedarach*[116]	Cytotoxicity
A102	6-acetylsendanal	R_1=R_4=R_5=H; R_2=Ac; R_3=*α*-OAc; R_6=OAc; R_7=CHO	*M. toosendan*[118]	Antifeedant
A103	sendanal B	R_1 = R_4=H; R_2=Ac; R_3=*α*-OAc; R_5=O; R_6=OAc; R_7=CHO	*M. toosendan*[119]	
A104	mesendanin A	R_1=R_5=H; R_2=Ac; R_3=*α*-OAc; R_4=Tig; R_6=O; R_7=CHO	*M. toosendan*[120]	
A105	mesendanin B	R_1= R_2= R_4=Ac; R_3=*α*-OH; R_5= R_6=H; R_7=Me	*M. toosendan*[120]	
A106	24,25,26,27tetra-norapotirucalla-(apoeupha)-1α,6α,12α-triacetoxyl-3α, 7α-dihydroxyl-28-aldehyde-14,20,22-trien-21,23-epoxy	R_1=Ac; R_2=R_4=R_5=H; R_3=*α*-OAc; R_6=OAc; R_7=CHO	*M. toosendan*[121]	
A107	14,15-deoxy-11-oxohavanensin 3,12-diacetate	R_1= R_3= R_4=H; R_2=Ac; R_5=O; R_6=OAc; R_7=Me	*M. toosendan*[122]	Enhanced NF-κB
A108	12-acetoxy-3-O-acetyl-7-O-tigloylvilasinin	R_1= R_3= R_5=H; R_2=Ac; R_4=Tig; R_6=OAc; R_7=Me	*Azadirachta indica* [123]	
A109	12-acetoxy-3-Oacetyl-7-O-Metvilasinin	R_1= R_3=R_5=H; R_2=Ac; R_4=^{i}Bu; R_6=OAc; R_7=Me	*A. indica*[123]	
A110	munronin N	R_1= R_5=R_6=H; R_2= R_4=Ac; R_3=*α*-OAc; R_7=Me	*Munronia henryi*[108]	
A111	turrapubin I	R_1= R_4=Ac; R_2=Ppy; R_3=*α*-OH; R_5=R_6=H; R_7=Me	*Turraea pubescens*[124]	
A112	toonasinenoid A	R_1= R_3=Ac; R_2= R_4=R_5=H; R_6=OH	*Toona sinensis*[97]	Neuroprotective
A113	toonasinenoid B	R_1= R_2= R_4= R_5=H; R_3=Ac; R_6=O	*T. sinensis*[97]	Neuroprotective
A114	trichisin R	R_1=Ac; R_2=OH; R_3=Ac; R_4= R_5= R_6=H	*Trichilia sinensis*[125]	
A115	trisinlin A	R_1= R_2= R_4= R_5=H; R_3=Ac; R_6=OAc	*T. sinensis* [130]	Insecticidal
A116	mesendanin C	R_1= R_3=Ac; R_2= R_5= R_6=H; R_4=OAc	*Melia toosendan*[120]	
A117	mesendanin D	R_1= R_5=Ac; R_2= R_3=R_4= R_6=H	*M. toosendan*[120]	
A118	dysomollide F	R_1= R_2= R_3=H; R_4=OH	*Dysoxylum mollissimum*[127]	
A119	entangolensin P	R_1= R_3=OAc; R_2=Ac; R_4=H	*Entandrophragma angolense*[98]	

A120	mufolinoid T	R= OAc; $\Delta^{14,15}$	*Munronia unifoliolata*[128]	
A121	1,2-dihydro-3a-hydroxy-turranolide	R= H	*Xylocarpus granatum*[129]	
A122	meliarachin A	R_1=Ac; R_2=H	*Melia azedarach*[131]	
A123	meliatoosenin F	R_1= R_2=H	*M. toosendan*[132]	
A124	mesendanin L	R_1=H; R_2=Ac	*M. toosendan*[140]	
A125	mesendanin J		*M. toosendan*[120]	
A126	mesendanin I		*M. toosendan*[120]	
A127	mesendanin G		*M. toosendan*[120]	
A128	mesendanin H	R_1= R_3=H; R_2=OAc	*M. toosendan*[120]	
A129	meliatoosenin I	R_1=OAc; R_2=H; R_3=Piv	*M. toosendan*[132]	
A130	meliatoosenin J	R_1= R_2=OAc; R_3=Piv	*M. toosendan*[132]	
A131	trichisin L	R_1=OAc; R_2=OH; R_3=H	*Trichilia sinensis* [125]	
A132	trichisin M	R_1=OAc; R_2=OH; R_3=^{i}Bu	*T. sinensis* [125]	
A133	trichisin N	R_1= R_2= R_3=H	*T. sinensis*[125]	
A134	trichisin O	R1=OAc; R_2=OH; R_3=Tig	*T. sinensis* [125]	
A135	mahaneemin/trichisinlin E		*T. sinensis*[134]; *Azadirachta excelsa*[133]	
A136	meliarachin D	R_1=OAc; R_2=OMe; R_3=OH	*Melia azedarach*[131]	Antibacterial
A137	meliarachin E	R_1=OH; R_2=H; R_3=OH	*M. azedarach*[131]	
A138	meliarachin F	R_1= R_2=OH; R_3=H	*M. azedarach*[131]	
A139	7-cinnamoyltoosendanin	R_1= R_2=H; R_3=Cin; R_4=OAc; R_5=OH	*M. azedarach*[135]	
A140	7-benzoyltoosendanin	R_1= R_2=H; R_3=Bz; R_4=OAc; R_5=OH	*M. azedarach*[135]	
A141	trichisinlin F	R_1=Ac; R_2=OH; R_3= R_4=H; R_5=Piv	*Trichilia sinensis* [134]	Cytotoxicity
A142	cipacinoid N	R_1=Ac; R_2=OAc; R_3=R_4=H; R_5=OH	*Cipadessa cinerascens*[136]	
A143	cipacinoid O	R_1= R_3= R_4=H; R_2=OAc; R_5=OH	*C. cinerascens*[136]	
A144	meliarachin B		*Melia azedarach*[131]	
A145	meliarachin C	R_1=H; R_2=Ac; R_3=Ac; R_4=Me	*M. azedarach*[131]	
A146	mesendanin K	R_1=OAc; R_2=R_3=H; R_4=Piv	*M. toosendan*[140]	Cytotoxicity
A147	toosendalactonins A/B		*M. azedarach*[137]	Neuroprotective
A148	meliazedalide B		*M. azedarach*[138]	Anti-inflammatory
A149	meliatoosenin E		*M. toosendan*[132]	
A150	trichisinlin A	R_1= R_3=Ac; R_2=OH; R_4=OPiv; R_5= R_6=H	*Trichilia sinensis*[134]	
A151	trichisinlin B	R_1=Ac; R_2=OAc; R_3=R_4=R_6=H; R_5=OMe	*T. sinensis*[134]	
A152	trichisinlin C	R_1=R_5=R6=H; R_2=OAc; R_3=Ac; R_4=OMe	*T. sinensis* [134]	
A153	*α*-hydroxymeliatoxin	R_1=R_5=H; R_2=OAc; R_3=Ac; R_4=O^{i}Bu; R_6=OH	*T. sinensis*[134]	Cytotoxicity

	B2			
A154	meliarachin G	R_1=R_2= R_5=H; R_3=Ac; R_4=OMe; R_6=OAc	*Melia azedarach*[131]	
A155	meliarachin H	R_1=R_2=R_3= R_5=H; R_4=OMe; R_6=OAc	*M. azedarach*[131]	Antibacterial
A156	meliarachin I	R_1=R_2=R_3= R_5=H; R_4=OMe; R_6=OH	*M. azedarach*[131]	
A157	meliarachin J	R_1=R_2=R_4=H; R_3=Ac; R_5=OMe; R_6=OH	*M. azedarach* [131]	
A158	meliarachin K	R_1=R_2=R_4=H; R_3=Ac; R_5=OMe; R_6=OAc	*M. azedarach*[131]	
A159	meliarachin L	R_1=R_2=R_4=H; R_3=Ac; R_5=OEt; R_6=OAc	*M. toosendan*[119]	
A160	meliatoosenin G	R_1=R_2=R_5=H; R_3=Ac; R_4=OMe; R_6=OAc	*M. toosendan*[132]	
A161	meliatoosenin H	R_1=R_2=R_4=H; R_3=Ac; R_5=OMe; R_6=OAc	*M. toosendan*[132]	
A162	12-dehydroneoazedarachin D	R_1= R_2=R_4=R_6=H; R_3=Ac; R_5=OMe	*M. azedarach*[139]	Cytotoxicity
A163	12-dehydro-29-exo-neoazedarachin D	R_1= R_2= R_5=R_6=H; R_3=Ac; R_4=OMe	*M. azedarach*[139]	Cytotoxicity
A164	12*α*-hydroxymeliatoosenin I		*M. toosendan*[122]	
A165	12*α*-hydroxymeliatoxin B1	R_1=Ac; R_2=H; R_3=Piv	*M. toosendan*[122]	Enhanced NF-κB
A166	12*α*-acetoxylmeliatoxin B2	R_1= R_2=Ac; R_3=^{i}Bu	*M. toosendan*[122]	
A167	trichisin P	R_1=Ac; R_2= R_3=H	*Trichilia sinensis* [125]	
A168	trichisin Q	R_1= R_2= R_3=H	*T. sinensis*[125]	



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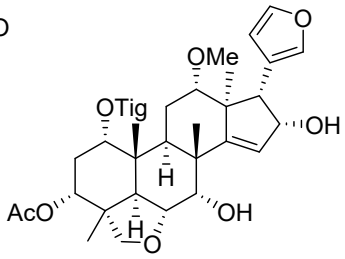

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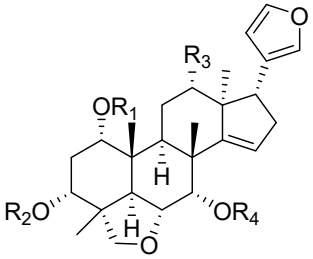

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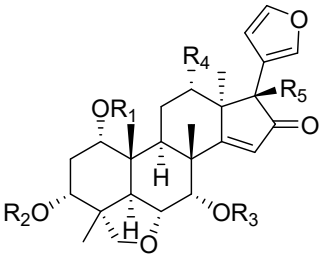

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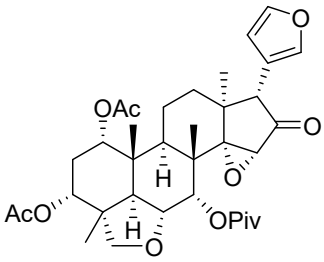

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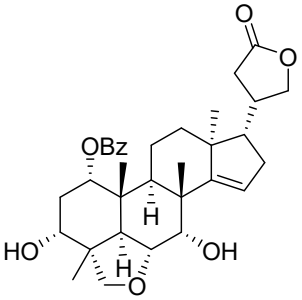

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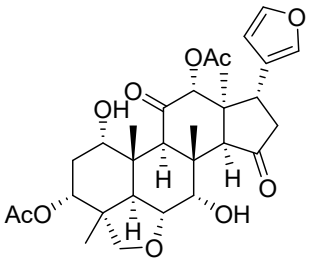

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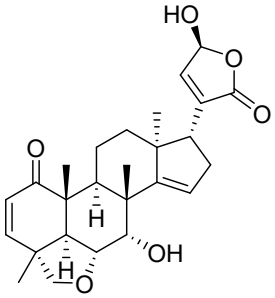

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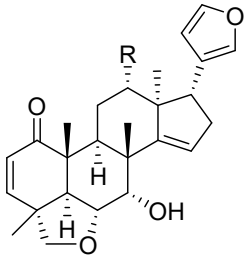

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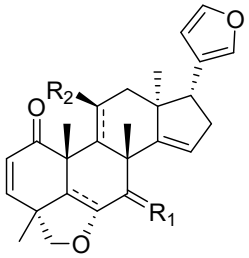

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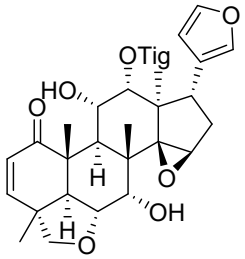

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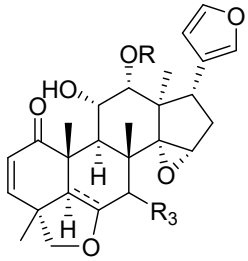

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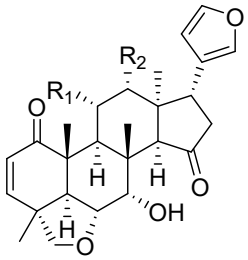

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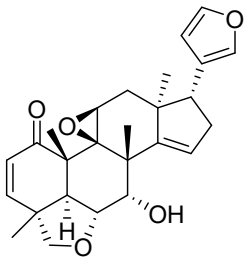

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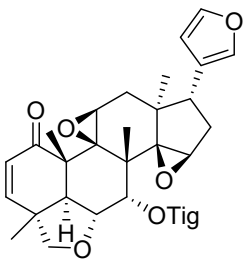

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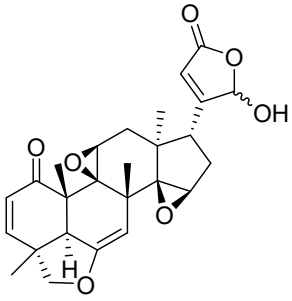

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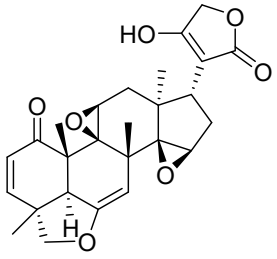

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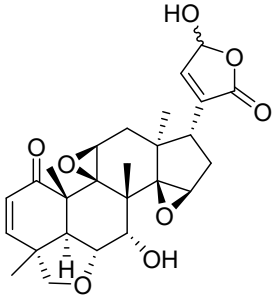

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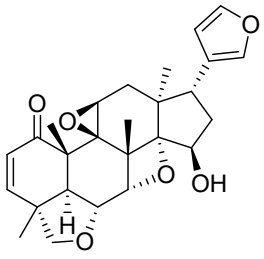

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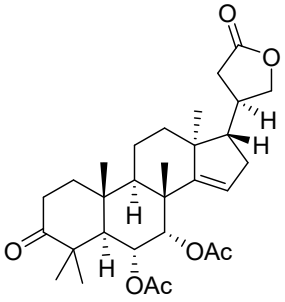

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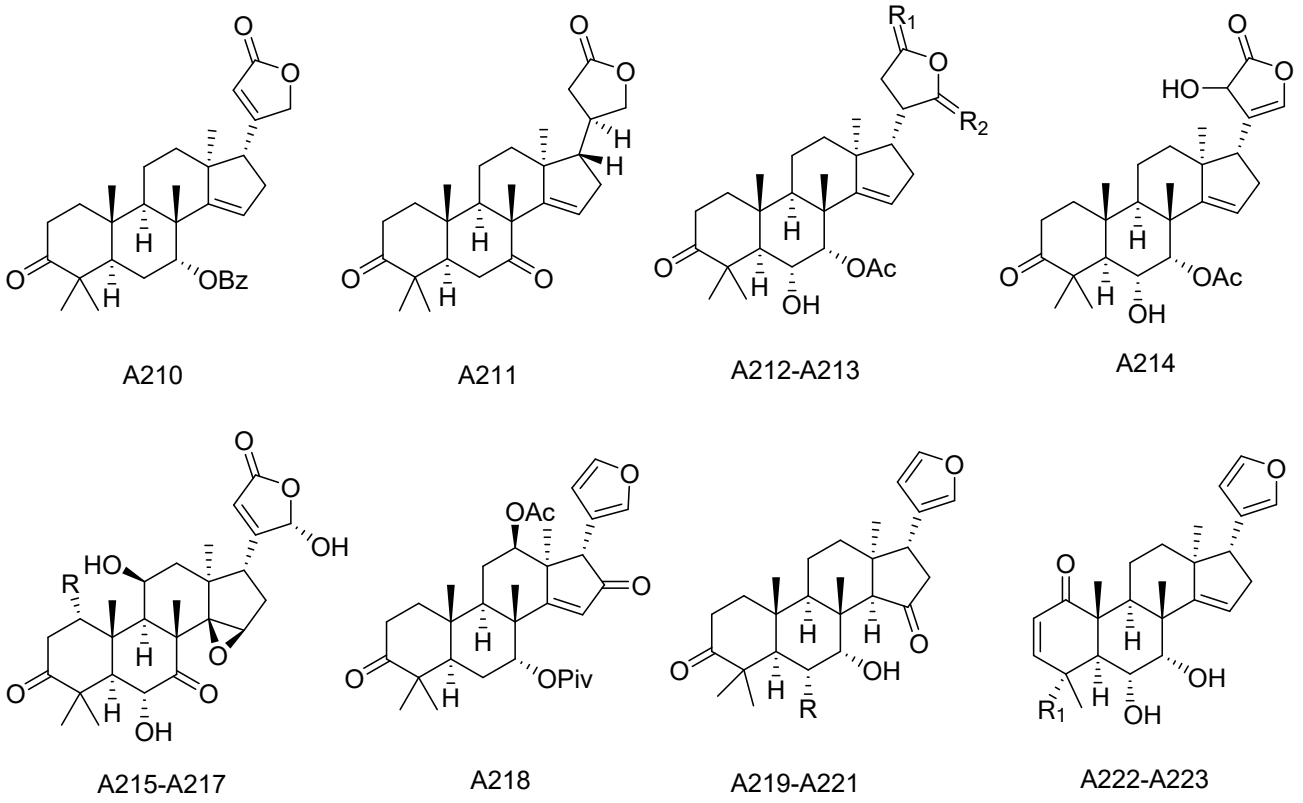


Figure S1.4 Structures of vilasinin-class, **A169-A208**, and other ring intact limonoids **A209-A224**

Table S1.3 Structures and sources of vilasinin-class, **A169-A208**, and other ring intact limonoids **A209-A224**

no	Compounds	Substitution groups and others	Sources	Bioactivity
A169	7,12-dihydroxyvilasinone	R=*α*-OH	*Azadirachta indica*[141]	
A170	vilasindione	R=O	*A.indica*[141]	
A171	munronoid N		*Munronia unifoliolata*[142]	Anti-TMV
A172	mufolinoid U	R_1= R_3=R_4=H; R_2=Ac	*M. unifoliolata*[128]	
A173	mufolinoid V	R_1= R_2=Ac; R_3=O; R_4=H	*M. unifoliolata*[128]	
A174	munronoid J	R_1= R_2=Ac; R_3=OAc; R_4=H	*M. unifoliolata*[87]	
A175	toosendansin H	R_1=Cin; R_2= R_4=H; R_3=O	*Melia toosendan*[143]	Anti-MDR; Cytotoxicity
A176	meliatoosenin K	R_1=Tig; R_2=R_4=H; R_3=OAc	*M. toosendan*[132]	
A177	3-acetyl-7-tigloylnimbidinin	R_1=H; R_2=Ac; R_3=O; R_4=Tig	*Azadirachta indica*[81]	
A178	cochinchinoid A	R_1= R_4=H; R_2= R_3=*R*-Piv; R_5=OH	*Walsura cochinchinensis*[82]	
A179	cochinchinoid B	R_1= R_4=H; R_2= R_3=*S*-Piv; R_5=OH	*W. cochinchinensis*[82]	
A180	cochinchinoid C	R_1= R_4= R_5=H; R_2=R_3=Tig	*W. cochinchinensis*[82]	
A181	cochinchinoid D	R_1= R_5=H; R_2=Tig; R_3=Piv; R_4=OAc	*W. cochinchinensis*[82]	
A182	cipadesin L	R_1= R_2=Ac; R_3=Piv; R_4= R_5=H	*Cipadessa baccifera* [144]	
A183	cipadesin M		*C. baccifera* [144]	

A184	toosendansin I		*Melia toosendan*[143]	
A185	11,15-dioxotrichilinin		*M. toosendan*[122]	
A186	pentandricine		*Chisocheton pentandrus*[145]	
A187	ceramicine B	R=H	*C. ceramicus* [146]	
A188	ceramicine H	R=OTig	*C. ceramicus*[146]	
A189	ceramicine I	R=OAc	*C. ceramicus*[146]	Cytotoxicity
A190	ceramicine O	R_1=O; R_2=H	*C. ceramicus* [147]	LDA inhibitory
A191	rubescin A	R_1=O; R_2=H; $\Delta^{5,6}$	*Trichilia rubescens*[148]	LDH leakage Inhibitory
A192	rubescin B	R_1=*α*-OH; R_2=H; $\Delta^{9,11}$	*T. rubescens*[148]	
A193	rubescin C	R_1=O; R_2=OAc	*T. rubescens*[148]	
A194	rubescin I	R_1=O; R_2=H	*T. rubescens*[149]	
A195	rubescin J	R_1=O; R_2=OAc; $\Delta^{5,6}$	*T. rubescens*[149]	
A196	walsuronoid D		*Walsura robusta*[150]	Cytotoxicity
A197	walsucochinone A	R_1=OH; R_2=OPiv; R_3=O; $\Delta^{5,6}$	*W. cochinchinensis* [151]	
A198	walsucochinone B	R_1=OH; R_2=OAc; R_3=O; $\Delta^{5,6}$	*W. cochinchinensis*[151]	
A199	walsucochinone C	R_1=OH; R_2=OPiv; R_3=O	*W. cochinchinensis*[151]	Cytotoxicity
A200	ceramicine N	R_1=R_2=H; R_3=*α*-OH	*Chisocheton ceramicus*[147]	LDA inhibitory
A201	ceramicine J	R_1= R_2=H	*C. ceramicus* [147]	Cytotoxicity
A202	walsuronoid E	R_1=OH; R_2=OTig	*Walsura robusta*[150]	Cytotoxicity
A203	rubescin D		*Trichilia rubescens* [152]	
A204	rubescin E		*T. rubescens* [152]	Anti-plasmodial
A205	gilgianin A		*T. gilgiana*[153]	Antiplasmodial ; Cytotoxicity
A206	gilgianin B		*T. gilgiana*[153]	Antiplasmodial ; Cytotoxicity
A207	rubescin G		*T. rubescens*[42]	
A208	rubescin F		*T. rubescens*[42]	
A209	mufolinoid S		*Munronia unifoliolata*[128]	
A210	dysomollide G		*Dysoxylum mollissimum*[127]	
A211	dysoxylumstatin C		*D.lukii* [154]	
A212	24,25,26,27-tetranor-apotirucall-6*α*-hydroxy7*α*-acetoxy-14-en-3-one-21,24-anhydride	R_1=O; R_2=O	*A. indica*[95]	
A213	24,25,26,27-tetranorapotirucall-6*α*-hydroxy-7*α*-acetoxy-14-en-3-one-21,23-olide	R_1=R_2=H	*A. indica*[95]	

A214	24,25,26,27-tetranorapotirucall-6*α*,22-dihydroxy-7*α*-acetoxy-14,20(21)-dien-3-one21,23-olide		*A. indica*[95]	
A215	11*β*-hydroxy-1,2-dihydroisowalsuranolide	R=H	*Walsura yunnanensis*[102]	
A216	1*α*,11*β*-dihydroxy-1,2-dihydroisowalsuranolide	R=OH	*W. yunnanensis*[102]	
A217	11β-hydroxy-1α-methoxy-1,2-dihydroisowalsuranolide	R=OMe	*W. yunnanensis*[102]	
A218	cochinchinoid J		*W. cochinchinensis*[82]	
A219	walsurin B	R_1=O;	*W. robusta*[99]	
A220	walsurin D	R_1=H	*W. robusta*[99]	
A221	toonayunnanae G	R_1=OAc;	*Toona ciliata*[80]	
A222	ceramicine F	R_1=CHO	*Chisocheton ceramicus*[146]	
A223	ceramicine G	R_1=COOMe	*C. ceramicus*[146]	Cytotoxicity

S1.2 Ring *seco* limonoids

S1.2.1 Ring A-*seco* limonoids (B1-B70)

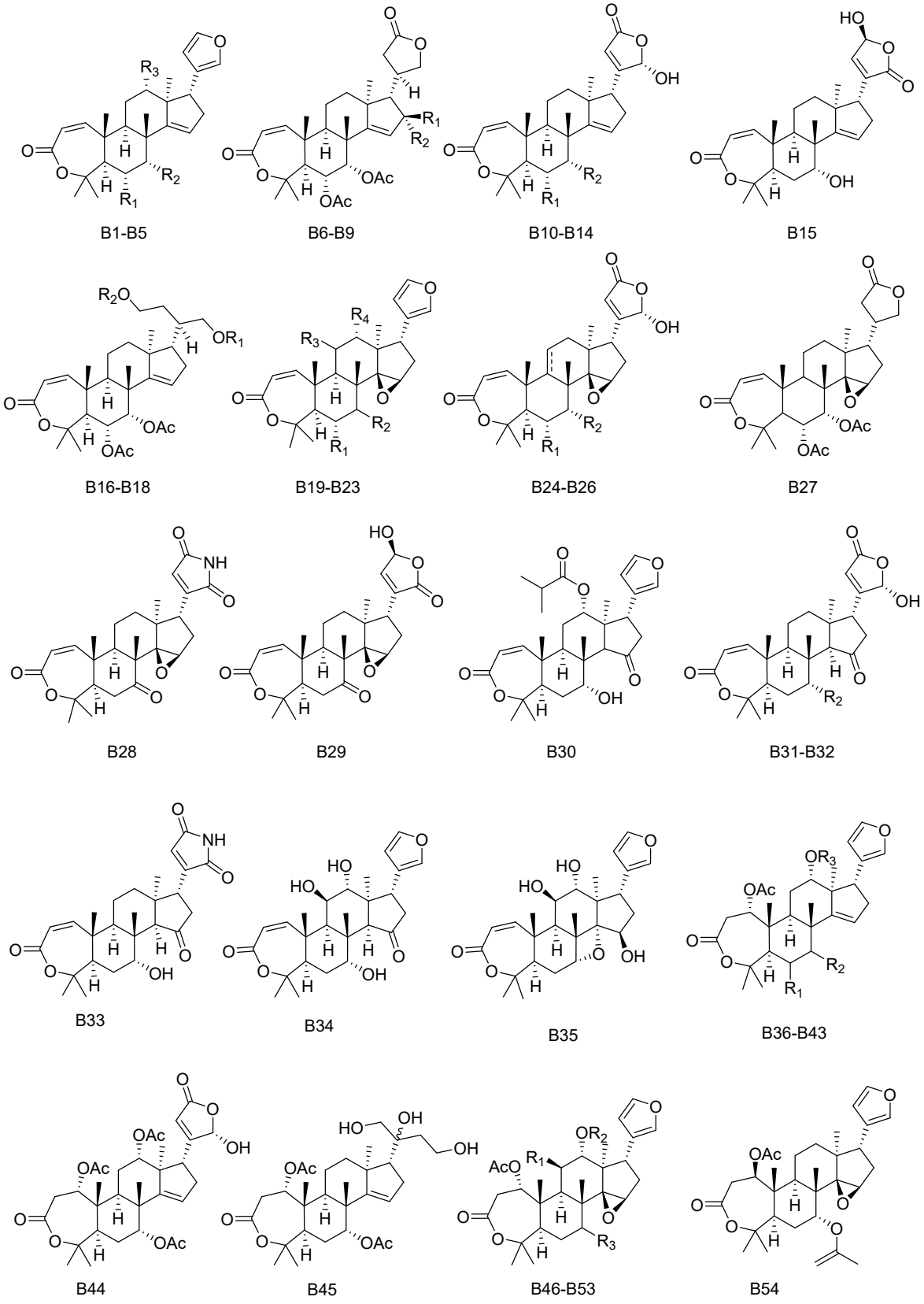


Figure S1.5 Continued

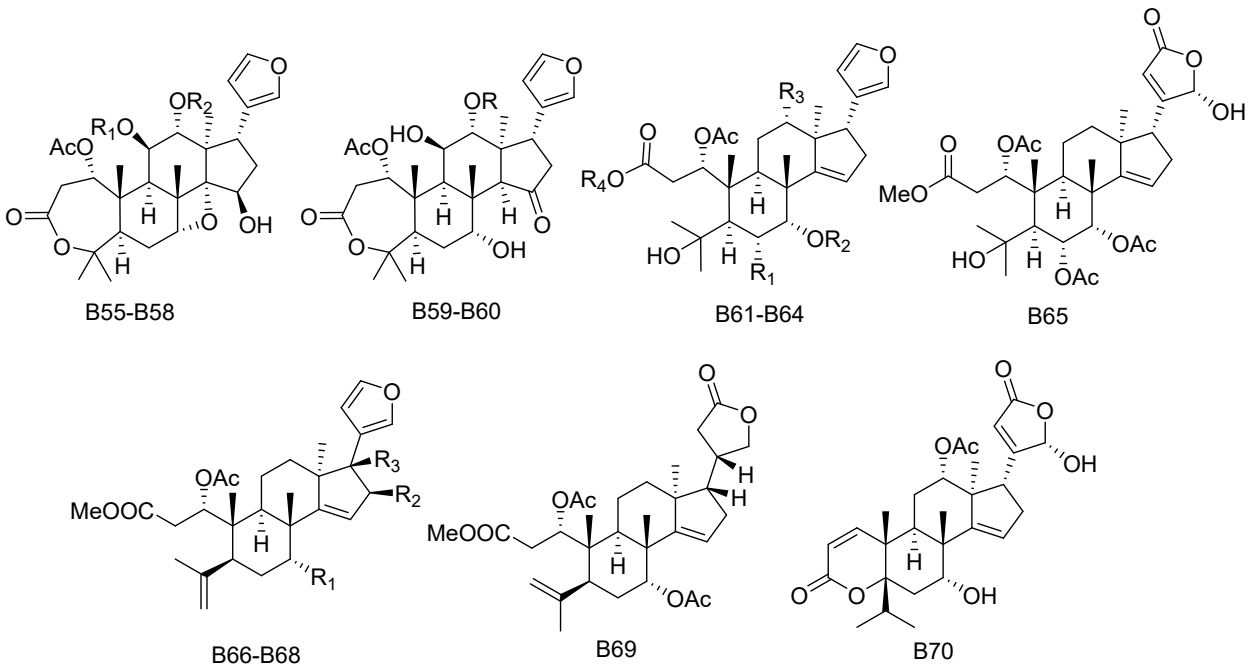


Figure S1.5 Structures of ring A-*seco* limonoids **B1**-**B70**

Table S1.4 Structures and sources of ring A-*seco* limonoids **B1**-**B70**

no	Compounds	Substitution groups and others	Sources	Bioactivity
B1	mufolinin B	R_1=R_2=OAc; R_3=H	*Munronia unifoliolata*[78]	Anti-inflammatory; Anti-multidrug resistance
B2	mufolinin C	R_1=OH; R_2=OAc; R_3=H	*M. unifoliolata*[78]	
B3	mufolinoid G	R_1=H; R_2= R_3=OAc	*M. unifoliolata*[128]	
B4	mufolinoid H	R_1=H; R_2=OH; R_3=OAc	*M. unifoliolata*[128]	
B5	mufolinoid I	R_1=H; R_2=O; R_3=OAc	*M. unifoliolata*[128]	
B6	mufolinoid L	R_1=OH; R_2=H	*M. unifoliolata*[128]	
B7	munronoid D	R_1= R_2=H	*M. unifoliolata*[87]	Anti-TMV
B8	munronoid E	R_1=R_2=O	*M. unifoliolata*[87]	
B9	munronoid F	R_1=OOH; R_2=H	*M. unifoliolata*[87]	Anti-TMV
B10	toonaolide J	R_1=H; R_2=OH	*Toona ciliata*[155]	
B11	toonaolide K	R_1=H; R_2=O	*T. ciliata*[155]	Anti-inflammatory
B12	toonaolide L	R_1=H; R_2=OAc	*T. ciliata*[155]	Anti-inflammatory
B13	toonaolide M	R_1=OH; R_2=OAc	*T. ciliata* [155]	
B14	toonaolide N	R_1=R_2=OAc	*T. ciliata*[155]	Anti-inflammatory
B15	toonaolide O		*T. ciliata*[155]	
B16	toonaolide S	R_1= R_2=H	*T. ciliata*[155]	
B17	mufolinoid J	R_1=Ac; R_2=H	*Munronia unifoliolata*[128]	
B18	mufolinoid K	R_1=H; R_2=Ac	*M. unifoliolata*[128]	
B19	toononoid E	R_1=H; R_2=O; R_3=α-OH; R_4=H	*Toona ciliata*[103]	
B20	toononoid F	R_1=OAc; R_2=β-OAc; R_3=α-OH; R_4=H	*T. ciliata*[103]	

B21	toonasinenine J	R_1=R_3=H; R_2=O; R_4=^{i}Bu	*T. sinensis*[156]	Radical scavenging
B22	toonayunnanin D	R_1=R_3= R_4=H; R_2=O	*T. ciliata* var. *yunnanensis*[101]	
B23	munronin H	R_1=H; R_2=O; R_3=*β*-OAc; R_4=OAc	*Munronia henryi*[108]	Anti-TMV
B24	toonaolide D	R_1=H; R_2=O	*Toona ciliata*[155]	
B25	toonaolide E	R_1=H; R_2=O; $\Delta^{9,11}$	*T. ciliata*[155]	
B26	toonaolide F	R_1=R_2=OAc	*T. ciliata*[155]	
B27	munronoid C		*Munronia unifoliolata*[87]	Anti-TMV
B28	toononoid D		*Toona ciliata*[103]	Anti-inflammatory
B29	toonaolide G		*T. ciliata*[155]	
B30	toonayunnanin C		*T. ciliata* var. *yunnanensis*[101]	
B31	toonaolide P	R=OH	*T. ciliata*[155]	
B32	toonaolide Q	R=OAc	*T. ciliata*[155]	
B33	toonaolide R		*T. ciliata*[155]	Anti-inflammatory
B34	aphanalide I		*Aphanamixis grandifolia*[160]	Insecticidal
B35	aphanalide J		*A. grandifolia*[160]	Insecticidal
B36	munronoid K	R_1=H; R_2=*α*-OAc; R_3=Hmp	*Munronia unifoliolata*[142]	Anti-TMV
B37	munronoid L	R_1=H; R_2=*α*-OAc; R_3=Ac	*M. unifoliolata*[142]	Anti-TMV
B38	munronoid M	R_1=H; R_2=*α*-O-(3-methylbut-2-enoate); R_3=Ac	*M. unifoliolata*[142]	Anti-TMV
B39	munronoid H	R_1=H; R_2=*α*-OH; R_3=Ac	*M.unifoliolata*[87]	
B40	munronoid G	R_1=H; R_2=O; R_3=Ac	*M. unifoliolata*[87]	
B41	mufolinin D	R_1=*α*-OH; R_2=R_3=Ac	*M. unifoliolata*[78]	Anti-multidrug resistance
B42	mufolinoid M	R_1=O; R_2= R_3=Ac	*M. unifoliolata*[128]	
B43	munronin J	R_1= R_2=H; R_3=Ac	*M. henryi*[108]	Anti-TMV
B44	mufolinoid N		*M. unifoliolata*[128]	
B45	cedrelosin F		*Guarea guidonia*[162]	
B46	aphanalide E	R_1=OH; R_2=2*R*, 3*R*-Hmp; R_3=*α*-OH	*Aphanamixis polystachya*[160]	
B47	aphanalide F	R_1=OH; R_2=2*R*, 3*R*-Hmp; R_3=*α*-OAc	*A. polystachya*[159]	
B48	aphanalide G	R_1=OOCH; R_2=2*R*, 3*R*-Hmp; R_3=*α*-OH	*A. polystachya*[159]	
B49	aphanalide H	R_1=OOCH; R_2= ^{i}Val; R_3=*α*-OH	*A. polystachya*[159]	
B50	aphanalide L	R_1=OH; R_2=H; R_3=*α*-OAc	*A. grandifolia*[160]	Insecticidal
B51	aphanalide M	R_1=OH; R_2=Nic; R_3=*α*-OH	*A. grandifolia*[160]	Insecticidal
B52	munronin I	R_1=OAc; R_2=Ac; R_3=O	*Munronia henryi*[108]	Anti-TMV
B53	mulavanin E	R_1=OAc; R_2=Tig; R_3=O	*M. delavayi*[158]	
B54	toonin B		*Toona sinensis* [157]	
B55	aphanalide A	R_1=OCH; R_2=^{i}Val	*Aphanamixis polystachya*[159]	
B56	aphanalide B	R_1=H; R_2=^{i}Val	*A. polystachya*[159]	
B57	aphanalide C	R_1=H; R_2=2*R*, 3*R*-Hmp	*A. polystachya*[159]	
B58	aphanagranin A	R_1= R_2=H	*A. grandifolia* [47]	Pesticidal activity
B59	aphanalide D	R=2*R*, 3*R*-Hmp	*A. polystachya*[159]	
B60	aphanalide K	R=H	*A. grandifolia*[160]	

B61	mufolinoid O	R_1=OH; R_2=Ac; R_3=H; R_4=Me	*Munronia unifoliolata*[128]	
B62	mufolinoid P	R_1=H; R_2=Ac; R_3=OAc; R_4=Me	*M. unifoliolata*[128]	
B63	mufolinoid Q	R_1=H; R_2=Ac; R_3=OAc; R_4=Et	*M. unifoliolata* [128]	
B64	mufolinoid R	R_1= R_2=H; R_3=OAc; R_4=Me	*M. unifoliolata* [128]	
B65	toonaolide C		*Toona ciliata*[155]	
B66	dysomollide E	R_1=OH; R_2=OAc; R_3=H	*Dysoxylum mollissimum*[127]	
B67	agleduline J	R_1=OAc; R_2=O; R_3=OH	*Aglaia edulis* [161]	
B68	agleduline K	R_1=OAc; R_2=O; R_3=H	*A. edulis*[161]	
B69	agleduline L		*A. edulis*[161]	
B70	toonaolide A		*Toona ciliata*[155]	

S1.2.2 Ring B-*seco* limonoids (B71-B142)

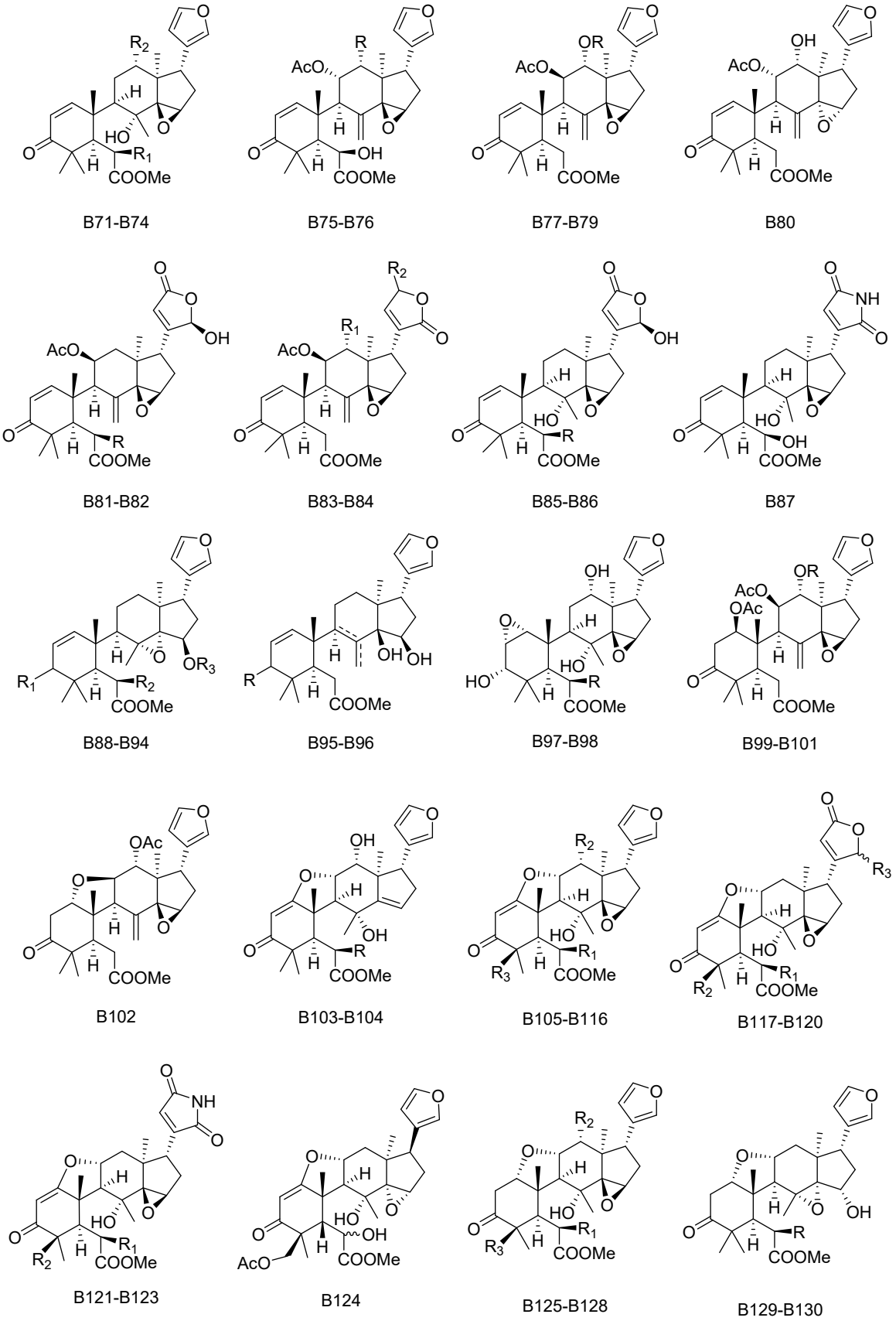


Figure S1.6 Continued

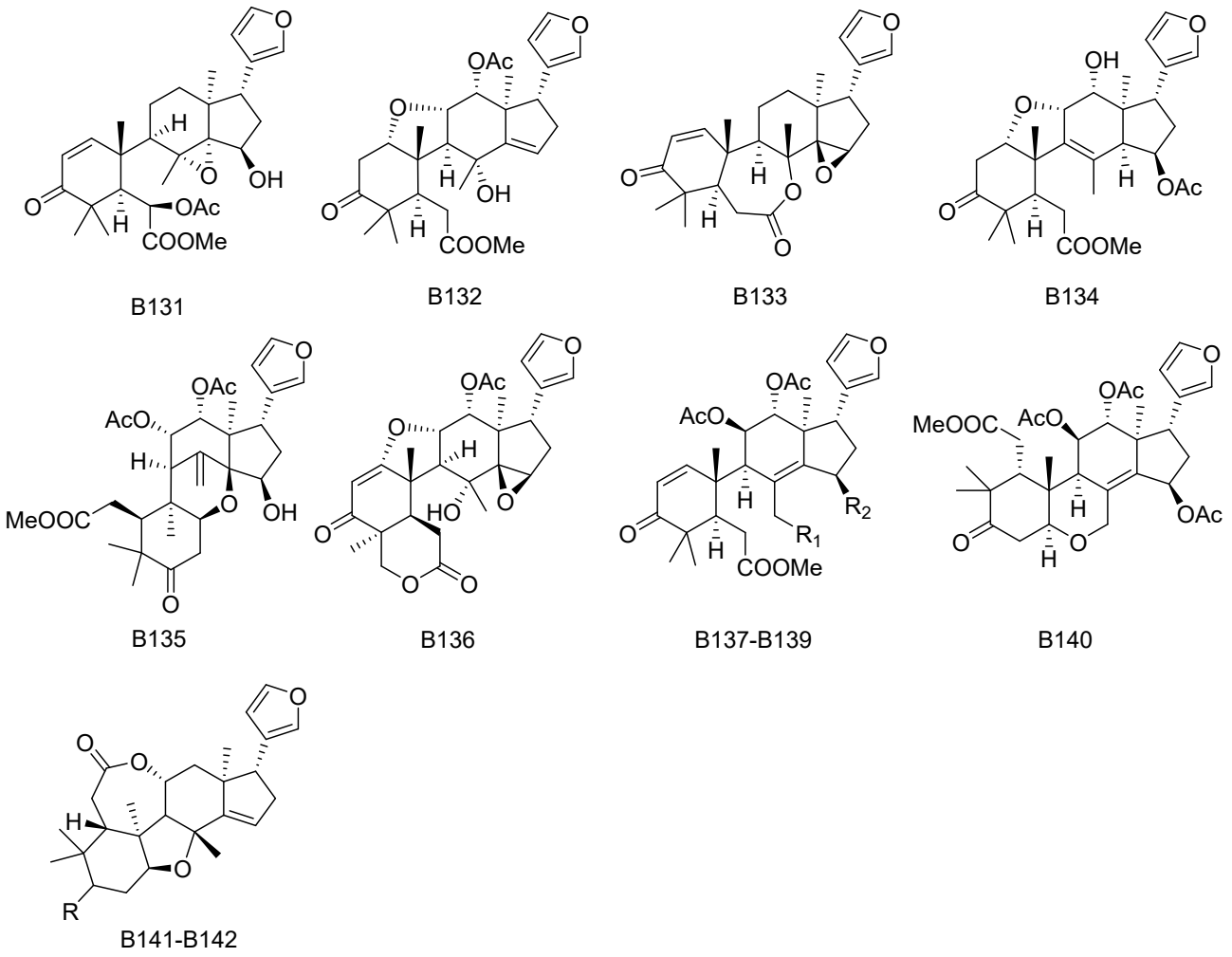


Figure S1.6 Structures of ring B-*seco* limonoids **B71-B142**

Table S1.5 Structures and sources of ring B-*seco* limonoids **B71-B142**

no	Compounds	Substitution groups and others	Sources	Bioactivity
B71	toonayunnanin F	R_1=OH; R_2=H	*Toona ciliata* var. *yunnanensis* [101]	
B72	toonasinenine G	R_1=OH; R_2=OH	*T. sinensis* [156]	Radical scavenging
B73	toonayunnanae C	R_1= R_2=H	*T. ciliata*[164]	
B74	toonayunnanae D	R_1=OAc; R_2=H	*T. ciliata* [164]	
B75	toonasinenine E	R=H	*T. sinensis* [156]	Radical scavenging
B76	toonacilianin E	R=OAc	*T. ciliata* var. *henryi* [166]	
B77	turrapubin E	R=H	*Turraea pubescens*[124]	
B78	turrapubin F	R=^{i}Bu	*T. pubescens*[124]	
B79	turrapubin G	R=Piv	*T. pubescens*[124]	
B80	toonamicronoid D		*Toona microcarpa* [167]	Cytotoxicity
B81	toonaone D	R=H	*T. ciliata*[106]	Anti-inflammatory
B82	toonaone F	R=OH	*T. ciliata*[106]	
B83	toonaone E	R_1=H; R_2=α-OH	*T. ciliata*[106]	
B84	turrapubin H	R_1=O^{i}Bu; R_2=OH	*Turraea pubescens*[124]	

B85	toonaone G	R=H	*Toona ciliata*[106]	Anti-inflammatory
B86	toonaone H	R=OH	*T. ciliata*[106]	
B87	toonaone I		*T. ciliata*[106]	
B88	toonacilianin A	R_1=*α*-OH; R_2=OH; R_3=H	*T. ciliata var. henryi*[166]	
B89	toonacilianin B	R_1=O; R_2= OH; R_3=H	*T. ciliata var. henryi*[166]	
B90	toonacilianin C	R_1=O; R_2= R_3=H	*T. ciliata var. henryi*[166]	
B91	ciliatasecone F	R_1=*β*-OH; R_2=OH; R_3=Ac	*T. ciliata var. yunnanensis*[100]	Anti-multidrug resistance
B92	ciliatasecone G	R_1=O; R_2=OH; R_3=Ac	*T. ciliata var. yunnanensis*[100]	
B93	toonasinenine H	R_1=*α*-OH; R_2= R_3=H	*T. sinensis*[156]	Radical scavenging
B94	toonaciliatone H	R_1=O; R_2=OAc; R_3=H	*T. ciliata* var. *yunnanensis*[327]	
B95	ciliatasecone D	R=O; $\Delta^{8,9}$	*T. ciliata* var. *yunnanensis* [100]	
B96	ciliatasecone E	R=*β*-OH; $\Delta^{8,30}$	*T. ciliata* var. *yunnanensis*[100]	
B97	toonacilianin D	R=H	*T. ciliata var. henryi*[166]	
B98	toonasinenine F	R=OH	*T. sinensis*[156]	
B99	turrapubin A	R=Ac	*Turraea pubescens*[124]	
B100	turrapubin B	R=^{i}Bu	*T. pubescens*[124]	Insecticidal
B101	turrapubin C	R=Piv	*T. pubescens*[124]	Insecticidal
B102	turrapubin D		*T. pubescens*[124]	
B103	ciliatasecone O	R=H	*Toona ciliata* var. *yunnanensis* [100]	
B104	ciliatasecone P	R=OH	*T. ciliata* var. *yunnanensis* [100]	
B105	toonacilianin F	R_1=H; R_2=OH; R_3=Me	*T. ciliata* var. *henryi* [166]	Cytotoxicity
B106	toonacilianin G	R_1=OAc; R_2=OH; R_3=Me	*T. ciliata* var *henryi*[166]	
B107	toonacilianin H	R_1=H; R_2=OAc; R_3=CH_2OAc	*T. ciliata* var. *henryi*[166]	
B108	toonacilianin I	R_1=OAc; R_2=OH; R_3=Me	*T. ciliata* var *henryi*[166]	
B109	toonacilianin J	R_1=OAc; R_2=OH; R_3=CH_2OAc	*T. ciliata* var. *henryi* [166]	
B110	toonayunnanin I	R_1=OAc; R_2=H; R_3=Me	*T. ciliata* var. *yunnanensis*[101]	
B111	toonayunnanin J	R_1=OAc; R_2=H; R_3=CHO	*T. ciliata* var. *yunnanensis* [101]	
B112	toonasinenine B	R_1= R_2=H; R_3=CHO	*Toona sinensis*[156]	Anti-inflammatory; Cytotoxicity
B113	ciliatasecone L	R_1= R_2=H; R_3=Me	*T. ciliata* var. *yunnanensis*[100]	
B114	ciliatasecone M	R_1=OAc; R_2=OH; R_3=CHO	*T. ciliata* var. *yunnanensis* [100]	
B115	toonaciliatone F	R_1=OH; R_2=OH; R_3=Me	*T. ciliata* var. *yunnanensis*[327]	
B116	toonaciliatone G	R_1=OAc; R_2=O; R_3=Me	*T. ciliata* var. *yunnanensis*[327]	
B117	ciliatone H	R_1=OAc; R_2=Me; R_3=*β*-OH	*T. ciliate*[163]	
B118	ciliatone I	R_1= R_3=OH; R_2=Me	*T. ciliate*[163]	
B119	ciliatone J	R_1=H; R_2=Me; R_3=OH	*T. ciliate*[163]	
B120	ciliatone K	R_1=OAc; R_2=CHO; R_3=OH	*T. ciliate*[163]	
B121	ciliatone C	R_1=H; R_2=Me	*T. ciliate*[163]	Anti-inflammatory
B122	ciliatone D	R_1=OAc; R_2=Me	*T. ciliate*[163]	Anti-inflammatory
B123	ciliatone E	R_1=OAc; R_2=CHO	*T. ciliate*[163]	
B124	toonamicronoid C		*T. microcarpa*[167]	
B125	toonasinenine A	R_1= R_2=H; R_3=CH_2OAc	*T. sinensis* [156]	Anti-inflammatory; Cytotoxicity

B126	toonasinenine C	R_1= R_2=OAc; R_3=CH_2OAc	*T. sinensis*[156]	Anti-inflammatory; Cytotoxicity
B127	toonayunnanin G	R_1=OAc; R_2=H; R_3=Me	*T. ciliata* var. *yunnanensis* [101]	
B128	toonayunnanin H	R_1=OAc; R_2=H; R_3=CH_2OAc	*T. ciliata* var. *yunnanensis* [101]	
B129	toonayunnanin K	R=OAc	*T. ciliata* var. *yunnanensis* [101]	
B130	toonayunnanin L	R-H	*T. ciliata* var. *yunnanensis* [101]	
B131	toonaciliaton H		*T. ciliata* var. *yunnanensis*[327]	
B132	toonayunnanae E		*T. ciliata*[164]	
B133	toonayunnanae A		*T. ciliata*[164]	Anti-inflammatory
B134	ciliatasecone Q		*T. ciliata* var. *yunnanensis* [100]	
B135	toonayunnanae B		*T. ciliata* [164]	
B136	toonaciliatone E		*T. ciliata* var. *yunnanensis*[327]	
B137	ciliatasecone H	R_1=OMe; R_2=OH	*T. ciliata* var. *yunnanensis* [100]	
B138	ciliatasecone I	R_1=OEt; R_2=OH	*T. ciliata* var. *yunnanensis* [100]	
B139	ciliatasecone K	R_1=H; R_2=O	*T. ciliata* var. *yunnanensis* [100]	Anti-multidrug resistance
B140	ciliatasecone J		*T. ciliata* var. *yunnanensis* [100]	
B141	ciliatonoid A	R=O	*T. ciliata* [165]	
B142	ciliatonoid B	R=α-OH	*T. ciliata*[165]	

S1.2.3 Ring C-*seco* limonoids (B143-B257)

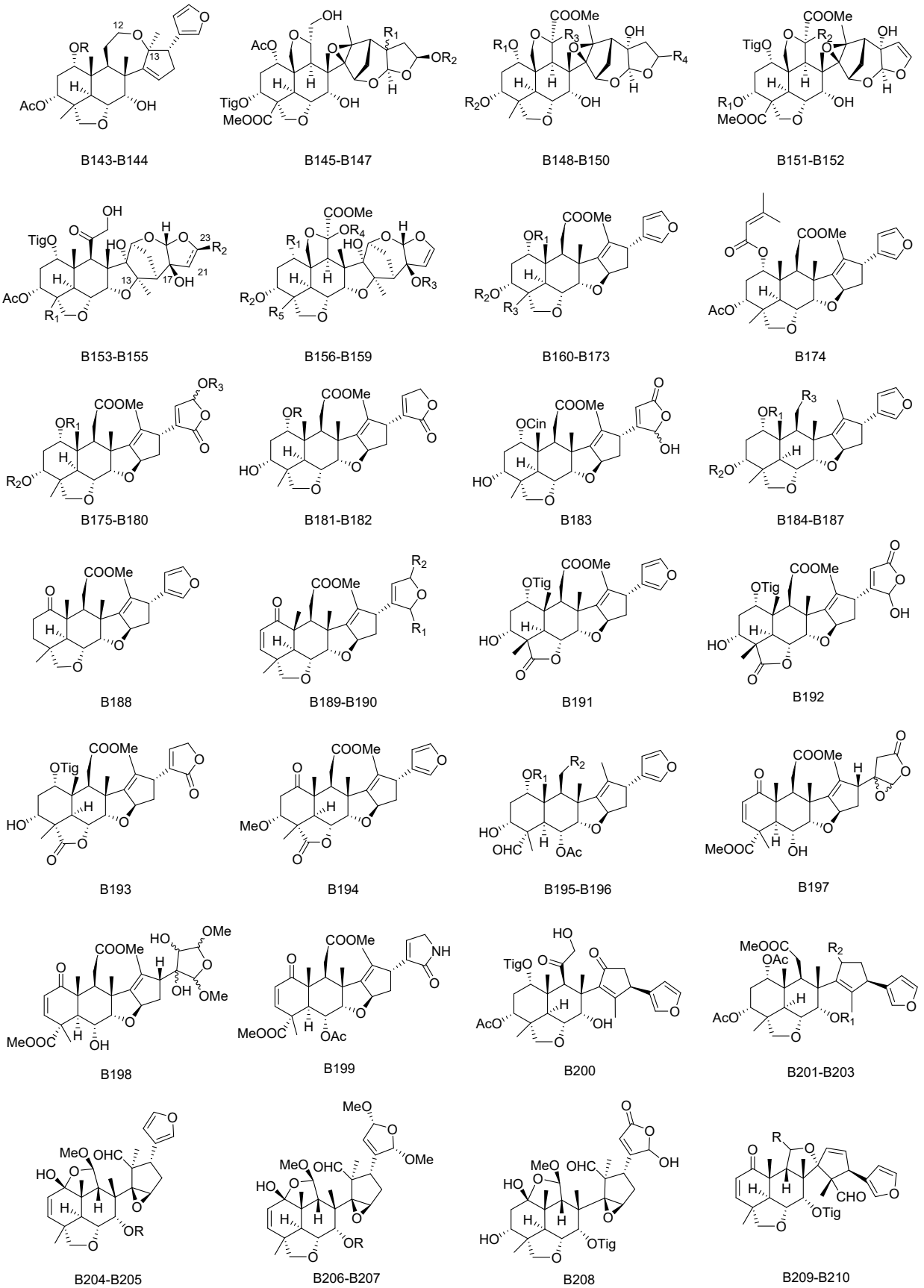


Figure S1.7 Continued

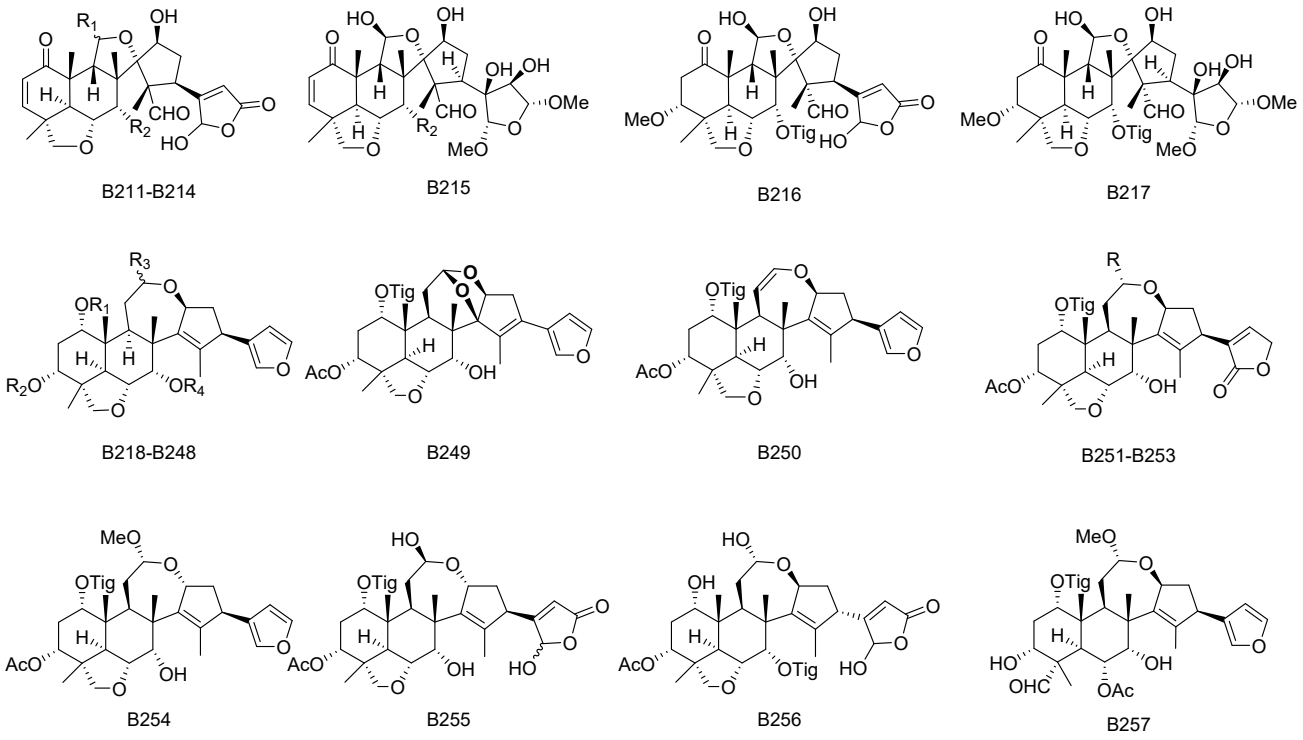


Figure S1.7 Structures of ring C-*seco* limonoids **B143**-**B257**

Table S1.6 Structures and sources of ring C-*seco* limonoids **B143**-**B257**

no	Compounds	Substitution groups and others	Sources	Bioactivity
B143	munrolin A	R=Ac	*Munronia unifoliolata*[168]	
B144	munrolin B	R=Tig	*M. unifoliolata* [168]	
B145	munrolin H	R_1=*α*-OH; R_2=Me	*M. unifoliolata* [168]	
B146	munrolin I	R_1=*α*-OH; R_2=Et	*M. unifoliolata* [168]	
B147	munrolin J	R_1=*β*-OH; R_2=Me	*M. unifoliolata* [168]	
B148	toosendansin E	R_1=R_2=Cin; R_3=OH; R_4=*β*-OEt	*Melia toosendan*[143]	Cytotoxicity
B149	toosendansin F	R_1=R_2=Cin; R_3=OH; R_4=*α*-OEt	*M. toosendan*[143]	
B150	azadirachtin J	R_1=^{i}Val; R_2=Ac; R_3=H; R_4=*β*-OMe	*Azadirachta indica*[169]	
B151	turrapubin K	R_1=Ppy; R_2=OH	*Turraea pubescens*[124]	
B152	1-tigloylazadirachtol	R_1= R_2=H	*Azaridachta indica*[95]	
B153	munrolin E	R_1=Me; R_2=H; $\Delta^{22,23}$	*Munronia unifoliolata*[168]	
B154	munrolin F	R_1=COOMe; R_2=H; $\Delta^{22,23}$	*M. unifoliolata*[168]	
B155	munrolin G	R_1=Me; R_2=OMe	*M. unifoliolata*[168]	
B156	toosendane A	R_1=OTig; R_2=H; R_3=Ac; R_4=Me; R_5=Me	*Melia toosendan*[170]	
B157	toosendane B	R_1=H; R_2=Tig; R_3=Ac; R_4=R_5=Me	*M. toosendan*[170]	Anti-inflammatory
B158	toosendane C	R_1=H; R_2=Met; R_3=Ac; R_4=R_5=Me	*M. toosendan*[170]	Anti-inflammatory
B159	turrapubin J	R_1=OTig; R_2=Ppy; R_3=R_4=H; R_5=COOMe	*Turraea pubescens*[124]	
B160	meliazedarine D	R_1=Cin; R_2=Tig; R_3=Me	*Melia azedarach*[116]	
B161	meliazedarine E	R_1=Cin; R_2=Bz; R_3=Me	*M. azedarach*[116]	

B162	meliazedarine F	R_1=Bz; R_2=Cin; R_3=Me	*M. azedarach*[116]	
B163	meliazedarine G	R_1= R_2=Bz; R_3=Me	*M. azedarach*[116]	Cytotoxicity
B164	meliazedarine H	R_1=Bz; R_2=Tig; R_3=Me	*M. azedarach*[116]	
B165	Toosendansin G	R_1= R_2=Tig; R_3=CHO	*M. toosendan*[143]	
B166	ohchinin benzoate	R_1=Cin; R_2=Bz; R_3=Me	*M. azedarach*[117]	Cytotoxicity
B167	1-detigloyl-1-O-Metsalannin	R_1=Met; R_2=Ac; R_3=Me	*Azadirachta indica*[123]	
B168	3-deacetyl-4'-demethylsalannin	R_1=Met; R_2=H; R_3=Me	*Melia azedarach*[171]	Cytotoxicity
B169	1-O-decinnamoyl-1-O-Z-cinnamoylohchinin	R_1=*Z*-Cin; R_2=H; R_3=Me	*M. azedarach*[139]	Cytotoxicity
B170	1-O-decinnamoyl-1-O-benzoylohchinin	R_1=Bz; R_2=H; R_3=Me	*M. azedarach*[139]	Cytotoxicity
B171	1-O-decinnamoyl-1-O-benzoyl-28-oxoohchinin	R_1=Bz; R_2=H; R_3=Me	*M. azedarach*[139]	Cytotoxicity
B172	3-O-deacetyl-40-demethyl-28-oxosalannin	R_1=Met; R_2=H; R_3=Me	*M. azedarach*[141]	Cytotoxicity
B173	toosendansins A	R_1= R_2=Tig; R_3=Me	*M. Toosendan*[172]	
B174	1-(E)-3,4-dimethylpent-2-enal-11-methoxycarbonyl nimbidinol acetate		*Azadirachta indica*[89]	
B175	23-methoxyohchininolide A	R_1=Cin; R_2=H; R_3=Me	*M. azedarach*[139]	Cytotoxicity
B176	23-methoxyohchininolide B	R_1=Cin; R_2=H; R_3=Me	*M. azedarach*[139]	Cytotoxicity
B177	23-Hydroxyohchininolide	R_1=Cin; R_2=R_3=H	*M. azedarach*[139]	Cytotoxicity
B178	1-O-decinnamoyl-1-O-benzoyl-23-hydroxyohchininolide	R_1=Bz; R_2=R_3=H	*M. azedarach*[139]	Cytotoxicity
B179	17-defurano-17-(5x-2,5-dihydro-5-hydroxy-2oxofuran-3-yl)-2',3'-dehydrosalannol	R_1=3-methylbut-2-enoate; R_2=R_3=H	*Azadirachta indica*[173]	Melanogenesis-inhibitory
B180	1-isovaleroyl-1-detigloylsalanninolide	R_1=^{i}Val; R_2=Ac; R_3=H	*A. indica*[81]	
B181	Ohchininolide	R=Cin	*Melia azedarach*[139]	Cytotoxicity
B182	1-O-decinnamoyl-1-O-benzoylohchininolide	R=Bz	*M. azedarach*[139]	Cytotoxicity
B183	21-hydroxyisoohchininolide		*M. azedarach*[139]	Cytotoxicity

B184	1-O-cinnamoyl-1-O-debenzoylohchinal	R_1=Cin; R_2=Ac; R_3=CHO	*M. Toosendan* [174]	
B185	meliatoosenin P	R_1=Tig; R_2=H; R_3=CHO	*M. toosendan* [132]	
B186	meliatoosenin Q	R_1=Tig; R_2=Ac ; R_3=$CH(OMe)_2$	*M. toosendan* [132]	
B187	munrolin C	R_1= R_2=Ac; R_3=CH_2OAc	*Munronia unifoliolata*[168]	
B188	28-deoxo-2,3-dihydronimbolide		*Azadirachta indica*[123]	Cytotoxicity
B189	17defurano-17-(2,5-dihydro-2-oxofuran-3-yl)-28-deoxonimbolide	R_1=O; R_2=H	*A. indica*[173]	
B190	17-defurano-17-(2x-2,5-dihydro-2hydroxy-5-oxofuran-3-yl)-28-deoxonimbolide	R_1=OH; R_2=O	*A. indica*[173]	Cytotoxicity
B191	3-deacetyl-28-oxosalannin		*Melia azedarach* [171]	
B192	3-deacetyl-28-oxosalanninolide		*M. azedarach* [175]	EBV-EA Inhibitory
B193	3-deacetyl-28-oxosalannolactone		*M. azedarach*[175]	Anti-inflammatory
B194	2,3-dihydro-3a-methoxynimbolide		*Azadirachta indica*[81]	Cytotoxicity
B195	meliatoosenin R	R_1=Tig; R_2=CHO	*Melia toosendan*[132]	
B196	1-detigloylohchinolal	R_1=H; R_2=COOMe	*M. azedarach*[171]	Cytotoxicity
B197	deacetyl-20,21-epoxy-20,22-dihydro-21-deoxyisonimbinolide		*Azadirachta indica*[81]	Melanogenesis-inhibitory
B198	deacetyl-20,21,22,23-tetrahydro-20,22-dihydroxy-21,23-dimethoxynimbin		*A. indica*[81]	Melanogenesis-inhibitory
B199	azadiramide B		*Azadirachta indica* [141]	Cytotoxicity
B200	munrolin D		*Munronia unifoliolata*[168]	
B201	meliazedarine A	R_1=Tig; R_2=α-OMe	*Melia azedarach*[116]	
B202	meliazedarine B	R_1=Bz; R_2=*α*-OMe	*M. azedarach*[116]	
B203	meliazedarine C	R_1=Met; R_2=*β*-OMe	*M. azedarach*[116]	
B204	walsogyne B	R=Tig	*Walsura chrysogyne*[176]	Cytotoxicity
B205	walsogyne C	R=^{i}Val	*W. chrysogyne*[176]	Cytotoxicity
B206	walsogyne D	R=Tig	*W. chrysogyne*[176]	Cytotoxicity
B207	walsogyne E	R=^{i}Val	*W. chrysogyne* [176]	
B208	walsogyne N		*W. chrysogyne*[177]	Antimalarial
B209	walsogyne F	R=*β*-OH	*W. chrysogyne*[176]	
B210	walsogyne G	R=*α*-OH	*W. chrysogyne*[176]	Cytotoxicity

B211	walsogyne H	R_1=*α*-OH; R_2=Tig	*W. chrysogyne*[177]	Antimalarial
B212	walsogyne J	R_1=*α*-OH; R_2=Met	*W. chrysogyne* [177]	Antimalarial
B213	walsogyne K	R_1=*β*--OH; R_2=Tig	*W. chrysogyne* [177]	Antimalarial
B214	walsogyne L	R_1=*β*-OH; R_2=Met	*W. chrysogyne*[177]	Antimalarial
B215	walsogyne O		*W. chrysogyne*[177]	Antimalarial
B216	walsogyne I		*W. chrysogyne* [177]	Antimalarial
B217	walsogyne M		*W. chrysogyne* [177]	Antimalarial
B218	meliatoosenin L	R_1= R_4=Tig; R_2=H; R_3= α-OMe	*Melia toosendan* [132]	
B219	meliatoosenin M/12-O-methyl-1-O-deacetylnimbolinin B	R_1=H; R_2=Ac; R_3=*α*-OMe; R_4=Tig	*M. toosendan*[132,173]	
B220	12-O-ethylnimbolinin B	R_1=Ac; R_2=Ac; R_3=*α*-OEt; R_4=Tig	*M. toosendan* [173]	
B221	meliatoosenin N	R_1= R_2=Ac; R_3=*β*-OMe; R_4=Tig	*M. toosendan* [132]	
B222	meliatoosenin O	R_1=Tig; R_2=Ac; R_3=α-OEt; R_4=H	*M. toosendan*[132]	
B223	meliatoosenin T	R_1=R_2=Ac; R_3=α-OMe; R_4=Met	*M. toosendan*[119]	Cytotoxicity
B224	meliatoosenin U	R_1=H; R_2=Ac; R_3=α-OMe; R_4=Met	*M. toosendan*[119]	
B225	1-decinnamoyl-1(20-methylacryloyl)nimbolinin C	R_1=Met; R_2=Ac; R_3=α-OMe; R_4=H	*M. toosendan*[122]	
B226	1-decinnamoylnimbolinin C	R_1= R_4=H; R_2=Ac; R_3=α-OMe	*M. toosendan*[122]	
B227	3-deacetyl-12-O-methylvolkensin	R_1=Tig; R_2= R_4=H; R_3=α-OMe	*M. toosendan*[122]	
B228	toosendansin B	R_1=Tig; R_2=Ac; R_3=*α*-OMe; R_4=Bz	*M. Toosendan* [172]	Cell protection
B229	toosendansin C /12-O-methy-1-O-tigloyl-1-O-deacetylnimbolinin B	R_1= R_4=Tig; R_2=Ac; R_3=*α*-OMe	*M. Toosendan*[172, 174]	
B230	12-ethoxynimbolinin E	R_1=Bz; R_2= R_4=H; R_3=*α*-OEt	*M. toosendan* [178]	Cytotoxicity
B231	12-ethoxynimbolinin F	R_1=Bz; R_2= R_4=H; R_3=*β*-OEt	*M. toosendan*[178]	
B232	12-ethoxynimbolinins G	R_1=Cin; R_2=Ac; R_3=*β*-OEt; R_4=H	*M. toosendan* [180]	Cytotoxicity
B233	12-ethoxynimbolinin H	R_1=H; R_2=Ac; R_3=*β*-OEt; R_4=Tig	*M. toosendan*[180]	
B234	12-ethoxynimbolinin I	R_1=Ac; R_2=Ac; R_3=*β*-OEt; R_4=Tig	*M. toosendan*[179]	
B235	12-ethoxynimbolinin J	R_1=Tig; R_2=Ac; R_3=*β*-OEt; R_4=Tig	*M. toosendan*[179]	
B236	12-ethoxynimbolinin K	R_1=H; R_2=Ac; R_3=*β*-OEt; R_4=H	*M. toosendan*[179]	
B237	1α, 7α-dihydroxyl-3α-acetoxyl-12α-ethoxylnimbolinin	R_1= R_4=H; R_2=Ac; R_3=*α*-OEt	*M. toosendan*[180]	
B238	1α-tigloyloxy-3α-acetoxyl-7α-hydroxyl-12β-ethoxylnimbolinin	R_1=Tig; R_2=Ac; R_3=*β*-OEt; R_4=H	*M. toosendan*[180]	Antibacterial
B239	1α,3α-dihydroxyl-7α-tigloyloxy-12α-	R_1=R_2=H; R_3=*α*-OEt; R_4= Tig	*M. toosendan*[121]	Neurite outgrowth-

	ethoxylnimbolinin			promoting activity
B240	1α,7α-ditigloyloxy-3α-acetoxyl-12αethoxylnimbolinin	R_1= R_4=Tig; R_2=Ac; R_3=α-OEt	*M. toosendan*[121]	
B241	1α-benzoyloxy-3α-acetoxyl7α-hydroxyl-12β-ethoxylnimbolinin	R_1=Bz; R_2=Ac; R_3=*β*-OEt; R_4=H	*M. toosendan*[121]	
B242	1-benzoylnimbolinin C	R_1=Bz; R_2=Ac; R_3=α-OMe; R_4=H	*M. azedarach* [135]	
B243	1-O-benzoyl-3-O-deactylnimbolinin C	R_1=Bz; R_2= R_4=H; R_3=*α*-OMe	*M. azedarach*[135]	Anti-inflammatory
B244	azadirachtin R	R_1=R_2=Ac; R_3=O; R_4=Tig	*Azadirachta Indica* [181]	Antibacterial
B245	munronin K	R_1=Tig; R_2=Ac; R_3=*β*-OMe; R_4=H	*Munronia henryi*[108]	Anti-TMV
B246	munrolin K	R_1=Tig; R_2=Ac; R_3= R_4=H	*M. unifoliolata*[168]	Anti-multidrug resistance
B247	munrolin L	R_1= R_2=Ac; R_3= R_4=H	*M. unifoliolata*[168]	
B248	munrolin M	R_1=Bz; R_2=Ac; R_3=R_4=H	*M. unifoliolata*[168]	
B249	munrolin Q		*M. unifoliolata*[168]	
B250	munronin M		*M. henryi*[108]	
B251	munrolin N	R=H	*M. unifoliolata*[168]	
B252	munrolin O	R=OMe	*M. unifoliolata*[168]	
B253	munrolin P	R=OEt	*M. unifoliolata*[168]	
B254	munronin L		*M. henryi*[108]	Anti-TMV
B255	munropin F		*M. pinnata* [182]	
B256	meliazedalide A		*Melia azedarach*[138]	
B257	meliatoosenin S		*M. toosendan* [112]	

S1.2.4 Ring D-*seco* limonoids (B258-B290)

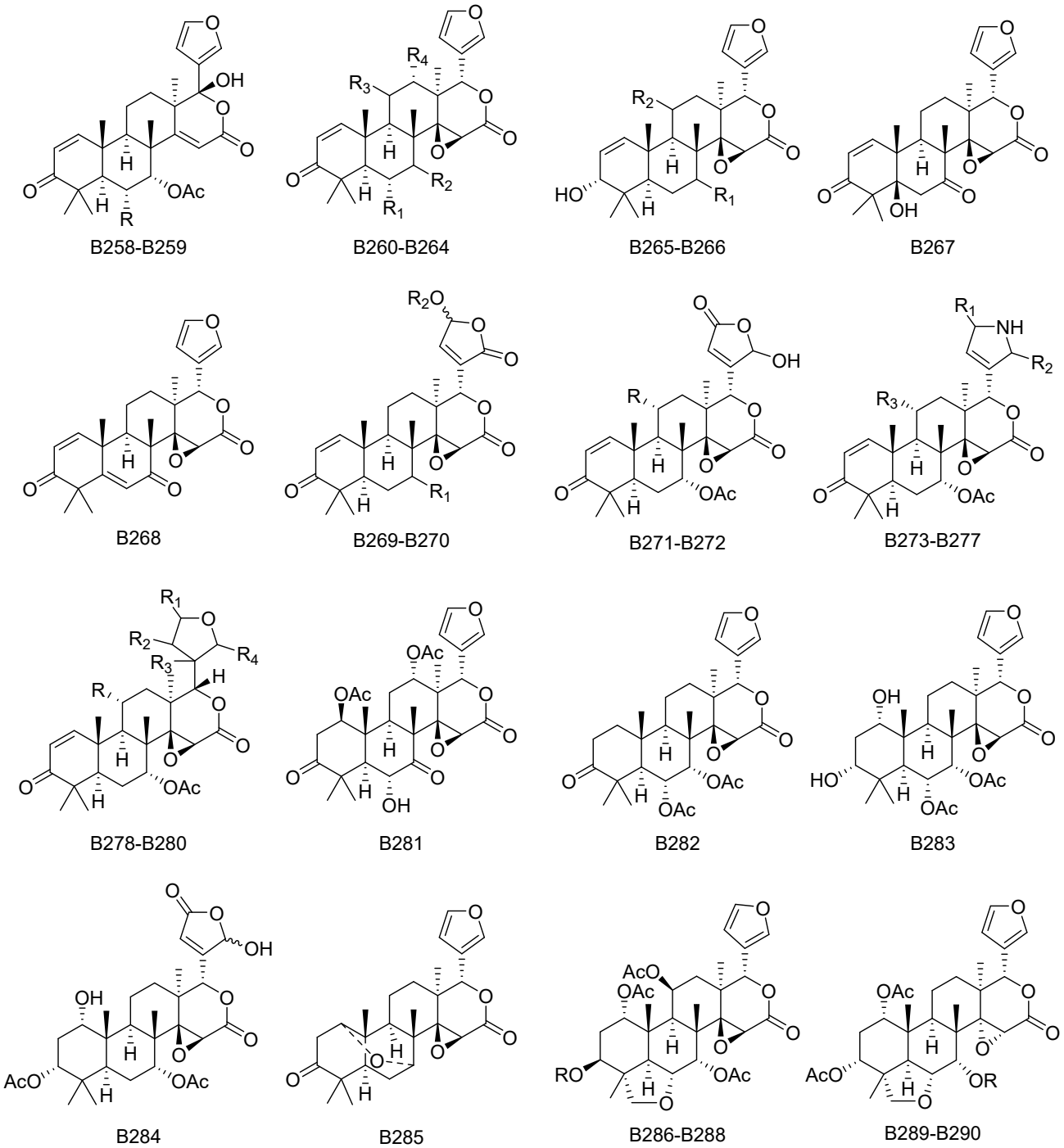


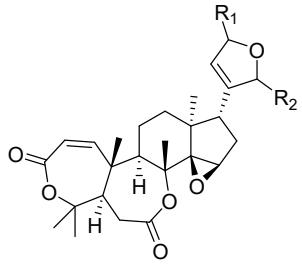
Figure S1.8 Structures of ring D-*seco* limonoids **B258**-**B290**

Table S1.7 Structures and sources of ring D-*seco* limonoids **B258**-**B290**

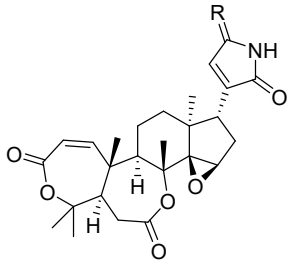
no	Compounds	Substitution groups and others	Sources	Bioactivity
B258	andirolide A	R=OAc	*Carapa guianensis*[183]	Cytotoxicity
B259	carapansin C	R=O	*C. guianensis* [183]	Anti-

				Inflammatory
B260	carapanolide J	R_1=R_4=H; R_2=O; R_3=*α*-OH	*C. guianensis*[185]	Anti-Inflammatory
B261	kostchyienone A	R_1= R_2= R_4=H; R_3=O	*Pseudocedrela kotschyi*[186]	Antiplasmodial
B262	kostchyienone B	R_1= R_4=H; R_2=*α*-OH; R_3=O	*P. kotschyi*[186]	Antiplasmodial
B263	monadelphin B	R_1=OH; R_2=O; R_3=H; R_4=OAc	*Trichilia monadelpha*[187]	
B264	entangolensin L	R_1=R_4=H; R_2=O; R_3=*α*-OAc	*Entandrophragma angolense*[98]	Cytotoxicity
B265	entangolensin M	R_1=O; R_2=*α*-OAc	*E. angolense*[98]	
B266	entangolensin N	R_1=*α*-OAc, R_2=*β*-OAc	*E. angolense*[98]	
B267	5-hydroxy-7-deacetoxy-7-oxogedunin		*E. angolense*[188]	
B268	5,6-dehydro-7-deacetoxy-7-oxogedunin		*E. angolense*[188]	
B269	thaimoluccepimer B	R_1=O; R_2=H	*Xylocarpus moluccensis*[189]	
B270	azadiraindin G	R_1=*α*-OAc; R_2=Me	*Azadirachta indica*[90]	
B271	toonasinemine H	R=H	*Toona sinensis*[94]	Cytotoxicity；anti-Inflammatory
B272	toonasinemine I	R=OAc	*T. sinensis*[94]	Anti-Inflammatory
B273	toonasinemine C	R_1= R_3=H; R_2=O	*T. sinensis*[94]	
B274	toonasinemine D	R_1= R_2=O; R_3=H	*T. sinensis*[94]	Cytotoxicity
B275	toonasinemine E	R_1= R_2=O; R_3=OAc	*T. sinensis*[94]	
B276	toonasinemine F	R_1=OH; R_2=O; R_3=H	*T. sinensis*[94]	Anti-Inflammatory
B277	toonasinemine G	R_1=O; R_2=OH; R_3=H	*T. sinensis*[94]	
B278	toonasinemine J	R_1=O; R_2=H; R_3=*β*-OH; R_4=*α*-OMe	*T. sinensis*[94]	
B279	toonasinemine K	R_1=R_4=*α*-OMe; R_2=R_3=*β*-OH	*T. sinensis*[94]	
B280	toonasinemine L	R_1=*β*-OMe; R_2=R_3=*β*-OH; R_4=*α*-OMe	*T. sinensis*[94]	
B281	monadelphin A		*Trichilia monadelpha*[187]	Cytotoxicity
B282	agleduline I		*Aglaia edulis*[161]	Anti-multidrug resistance
B283	khasenegasin W		*Khaya senegalensis* [190]	
B284	khasenegasin X		*K. senegalensis* [190]	
B285	kotschyin H		*Pseudrocedrela kotschyi*[191]	
B286	cochinchinoid E	R=Tig	*Walsura cochinchinensis*[82]	
B287	cochinchinoid F	R=*R*-Piv	*W. cochinchinensis*[82]	
B288	cochinchinoid G	R=*S*-Piv	*W. cochinchinensis*[82]	
B289	cipadesin J	R=H	*Cipadessa baccifera*[144]	
B290	cipadesin K	R=Piv	*C. baccifera*[144]	Cytotoxicity

S1.2.5 Rings A,B-*seco* limonoids (B291-B375)



B291-B292



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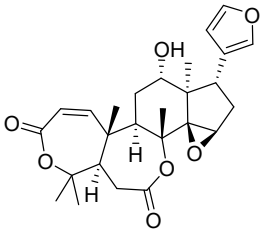

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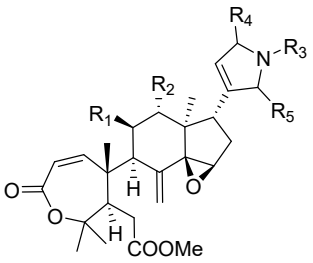

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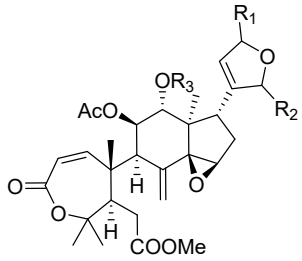

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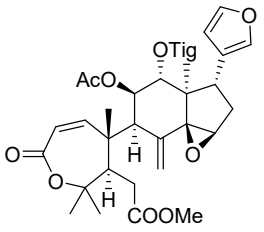

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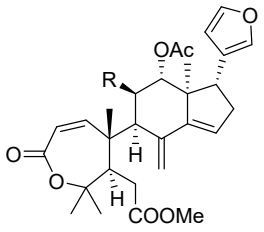

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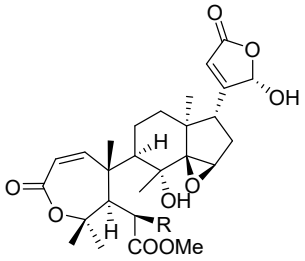

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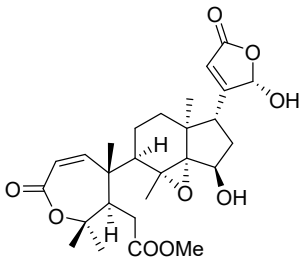

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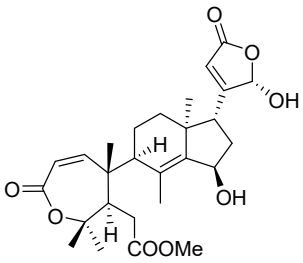

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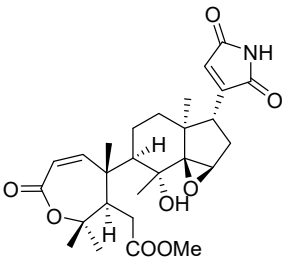

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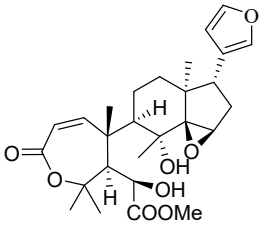

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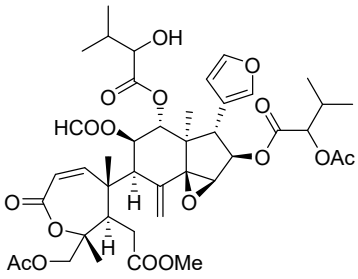

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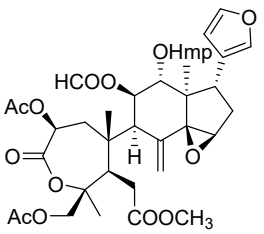

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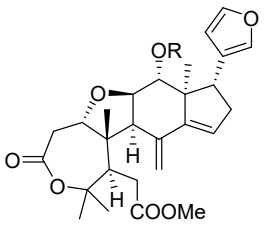

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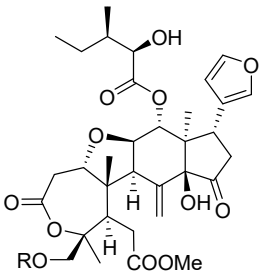
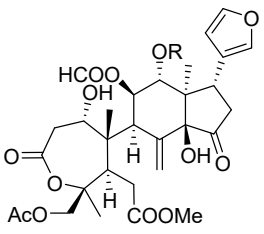
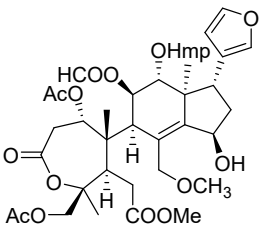


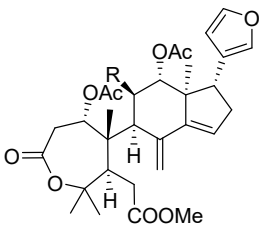
B332-B333



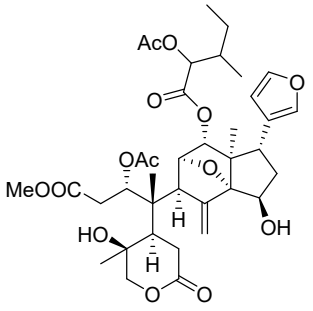
B334-B335



B336



B337-B338



B339

Figure S1.9 Continued

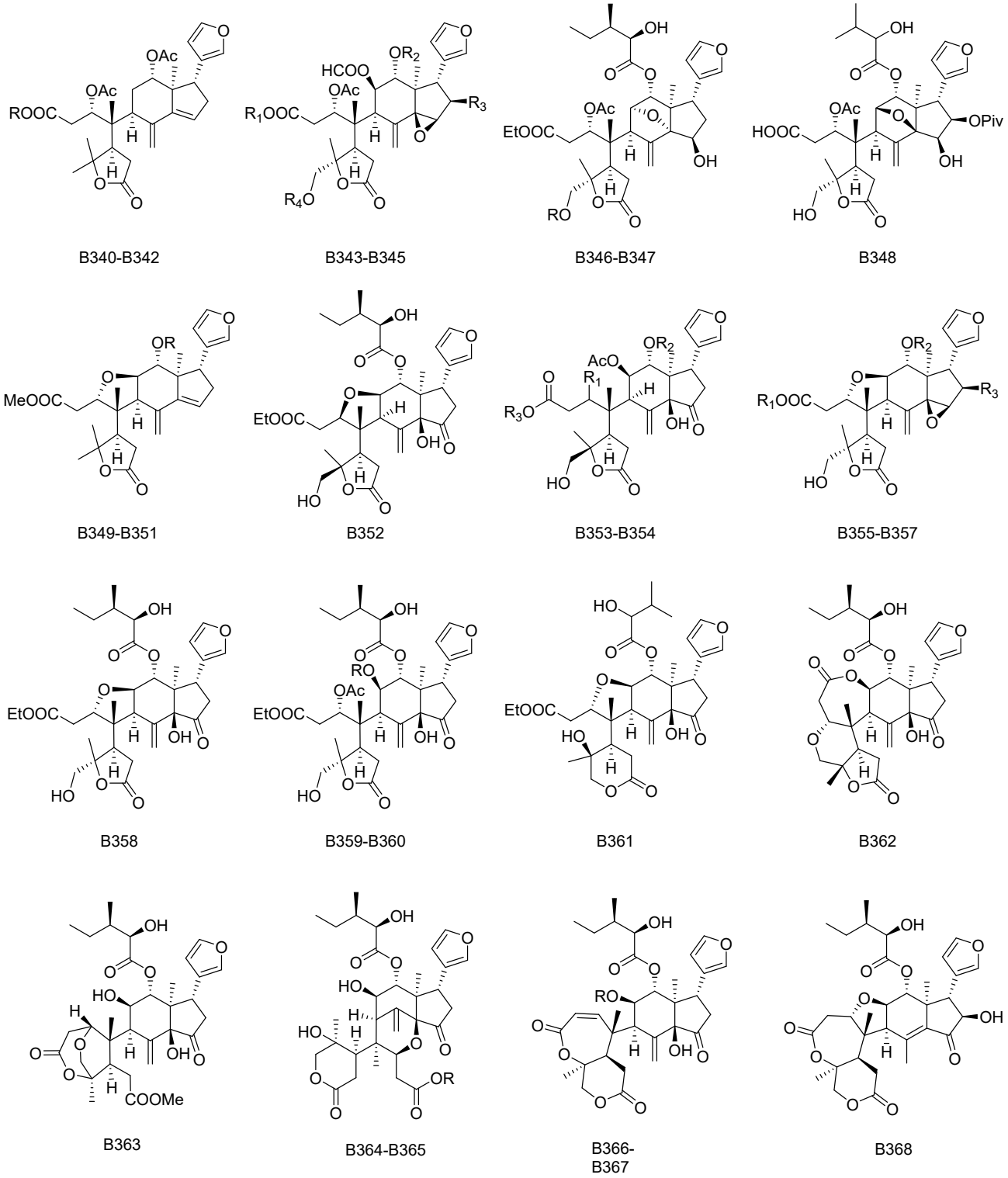


Figure S1.9 Continued

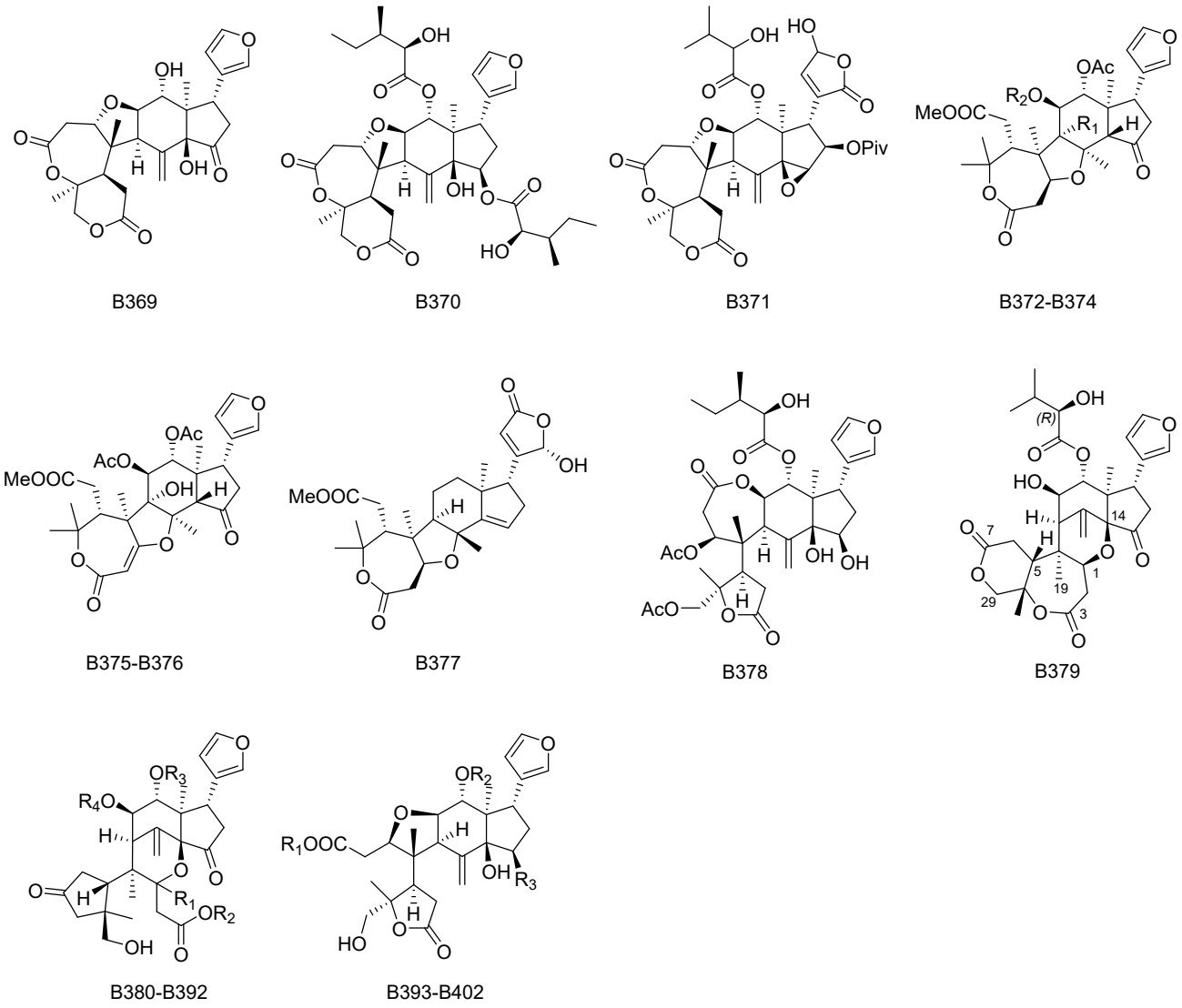


Figure S1.9 Structures of rings A, B-*seco* limonoids **B291**-**B402**

Table S1.8 Structures and sources of rings A, B-*seco* limonoids **B291**-**B402**

no	Compounds	Substitution groups and others	Sources	Bioactivity
B291	toononoid A	R_1=*β*-OMe; R_2=O	*Toona ciliata*[103]	
B292	toonaolide H	R_1=O; R_2=*α*-OH	*T. ciliata*[155]	
B293	toononoid B	R=H	*T. ciliata*[103]	
B294	toonaolide I	R=O	*T. ciliata*[155]	Anti-Inflammatory
B295	toononoid C		*T. ciliata* [103]	
B296	amooramide A	R_1=OAc; R_2=Bz ; R_3=H	*Amoora tsangii*[192]	
B297	amooramide B	R_1=OAc; R_2=Bz; R_3=Me	*A. tsangii* [192]	
B298	amooramide C	R_1=OAc; R_2=Bz; R_3=CH_2CH_2OH	*A. tsangii* [192]	
B299	amooramide D	R_1=OAc; R_2=Piv; R_3=H	*A. tsangii* [192]	
B300	amooramide E	R_1=OAc; R_2=^{i}Bu; R_3= H	*A. tsangii* [192]	
B301	amooramide F	R_1=OAc; R_2=Piv; R_3=4-hydroxy-2,6-dimethoxyphenyl	*A. tsangii* [192]	

B302	amooramide G	R_1=OOCH; R_2=Bz; R_3=H	*A. tsangii* [192]	
B303	amooramide H	R_1= Bz; R_2= H	*A. tsangii* [192]	
B304	amooramide I	R_1= Piv; R_2=H	*A. tsangii*[192]	NF-κB inhibitory
B305	amooramide J	R_1=^{i}Bu; R_2=H	*A.tsangii* [192]	
B306	amooramide K	R_1= Bz; R_2= Me	*A. tsangii* [192]	
B307	amooramide L	R_1= Piv; R_2= Me	*A. tsangii* [192]	
B308	munropin A	R_1=OAc; R_2=H	*Munronia pinnata*[182]	
B309	munropin B	R_1=OAc; R_2=CH_2CH_2OH	*M. pinnata*[182]	
B310	munropin C	R_1=H; R_2=O; R_3=Ac	*M. pinnata*[182]	
B311	munronin C	R_1=OH; R_2=O; R_3=Ac	*M. henryi*[108]	
B312	munronin D	R_1=OMe; R_2=O; R_3=Ac	*M. henryi*[108]	
B313	munronin E	R_1=OMe; R_2=H; R_3=Ac	*M. henryi*[108]	
B314	munronin F	R_1=O; R_2=OH; R_3=Ac	*M. henryi*[108]	
B315	mulavanin A	R_1=OH; R_2=O; R_3=Tig	*M. delavayi*[158]	
B316	mulavanin B	R_1=O; R^2=OH; R_3=Tig	*M. delavayi*[158]	
B317	munronoid O	R_1=O; R_2=H; R_3=Ac	*M. unifoliolata*[142]	Anti- TMV
B318	munronin P		*M. henryi*[193]	Anti- TMV
B319	munronin Q	R=OAc	*M. henryi*[193]	Anti- TMV
B320	munronoid B	R=H	*M. unifoliolata*[87]	
B321	toonaolide T	R=H	*Toona ciliata*[155]	
B322	toonaolide U	R=OAc	*T. ciliata* [155]	
B323	toonaolide V		*T. ciliata*[155]	
B324	toonaolide W		*T. ciliata*[155]	
B325	toonaolide X		*T. ciliata*[155]	
B326	toonasinenine I		*T. sinensis*[156]	Radical scavenging
B327	dysomollide A		*Dysoxylum mollissimum*[127]	
B328	mulavanin D		*Munronia delavayi*[158]	Antifungal
B329	aphanamixoid K	R=Tig	*Aphanamixis polystachya*[60]	
B330	aphanamixoid L	R=Piv	*A. polystachya*[60]	
B331	aphanamixoid M	R=Bz	*A. polystachya*[60]	
B332	aphapolynin B	R=H	*A. polystachya*[48]	
B333	aphanaonoid H	R=Ac	*A. sinensis*[214]	
B334	aphanaonoid I	R=2*R*, 3*R*-Hmp	*A. sinensis*[214]	
B335	aphanaonoid J	R=^{i}Val	*A. sinensis*[214]	
B336	ciparasin P		*Cipadessa cinerascens*[314]	
B337	munronoid A	R=H	*Munronia unifoliolata*[87]	Anti-TMV
B338	munronin B	R=OAc	*M. henryi*[108]	Anti-TMV
B339	munronin A		*M.henryi*[108]	Cytotoxicity
B340	mufolinoid A	R=Me	*M. unifoliolata*[128]	
B341	mufolinoid B	R=Et	*M. unifoliolata*[128]	
B342	mufolinoid C	R=H	*M. unifoliolata*[128]	

B343	mufolinoid D	R_1=Et; R_2=2*R*,3*R*-Hmp; R_3=H; R_4=Ac	*M. unifoliolata*[128]	
B344	dysoxylumasin E	R_1=H; R_2=^{i}Val(OH); R_3=O^{i}Val(OAc); R_4=H	*Dysoxylum mollissimum*[195]	
B345	dysoxylumasin F	R_1=H; R_2=^{i}Val(OH); R_3=OPiv; R_4=H	*D. mollissimum*[195]	
B346	mufolinoid E	R=Ac	*M. unifoliolata*[128]	
B347	mufolinoid F	R=H	*M. unifoliolata*[130]	
B348	dysoxylumasin A		*Dysoxylum mollissimum*[195]	
B349	aphanamixoid N	R=Tig	*Aphanamixis polystachya* [60]	
B350	aphanamixoid O	R=Piv	*A. polystachya*[60]	
B351	aphanamixoid P	R=Bz	*A. polystachya*[60]	
B352	aphanaonoid E		*A. polystachya*[214]	
B353	aphanaonoid F	R_1=*β*-OH; R_2=2*R*,3*R*-Hmp; R_3=Et	*A. polystachya*[214]	
B354	aphanaonoid G	R_1=*α*-OH; R_2=^{i}Val; R_3=Me	*A. polystachya* [214]	
B355	dysoxylumasin C	R_1=H; R_2=^{i}Val(OH); R_3=OPiv	*Dysoxylum mollissimum*[195]	
B356	dysoxylumasin D	R_1=H; R_2=^{i}Val(OH); R_3=O^{i}Val(OAc)	*D. mollissimum*[195]	
B357	aphapolynin F	R_1=Et; R_2=2*R*,3*R*-Hmp; R_3=H	*A. polystachya*[46]	Insecticidal
B358	aphapolynin G		*A. polystachya*[46]	
B359	aphapolynin H	R=H	*A. polystachya*[46]	Fungicidal
B360	aphapolynin I	R=OCH	*A. polystachya*[46]	
B361	aphanagranin D		*A. grandifolia*[47]	
B362	aphanaonoid A		*A. polystachya*[214]	
B363	aphanaonoid B		*A. polystachya*[214]	
B364	aphanaonoid C	R=Me	*A. polystachya*[214]	
B365	aphanaonoid D	R=H	*A. polystachya*[214]	
B366	aphapolynin C	R=OCH	*A. polystachya*[46]	Fungicidal; Insecticidal
B367	aphapolynin D	R=H	*A. polystachya*[46]	Fungicidal; Insecticidal
B368	aphapolynin E		*A. polystachya*[46]	Fungicidal
B369	aphanagranin C		*A. grandifolia*[47]	
B370	trichirokin		*Trichilia emetica*[196]	
B371	dysoxylumasin B		*Dysoxylum mollissimum*[195]	
B372	trichilone A	R_1=H; R_2=^{i}Bu	*Trichilia adolfi*[194]	Cytotoxicity
B373	trichilone B	R_1=H; R_2=Piv	*T. adolfi*[194]	Cytotoxicity
B374	trichilone C	R_1=OH; R_2=Piv	*T. adolfi*[194]	Cytotoxicity
B375	trichilone D	R=Ac	*T. adolfi*[194]	
B376	trichilone E	R=^{i}Bu	*T. adolfi*[194]	Cytotoxicity
B377	toonaolide B		*Toona ciliata*[155]	
B378	zaphaprinin A		*Aphanamixis grandifolia*[197]	Insecticidal activity
B379	zaphaprinin B		*A. grandifolia*[197]	Insecticidal activity
B380	zaphaprinin C	R_1=*α*-H; R_2=Me; R_3=H; R_4=2*R*,3*R*-Hmp	*A. grandifolia*[197]	
B381	zaphaprinin D	R_1=*α*-H; R_2=Et; R_3=H; R_4=2*R*,3*R*-Hmp	*A. grandifolia*[197]	

B382	zaphaprinin E	R_1=b-H; R_2=H; R_3=2*R*,3*R*-Hmp ; R_4=H	*A. grandifolia*[197]	
B383	zaphaprinin F	R_1=b-H; R_2=Et; R_3=2*R*,3*R*-Hmp ; R_4=H	*A. grandifolia*[197]	
B384	zaphaprinin G	R_1=*α*-H; R_2=H; R_3=2*R*,3*R*-Hmp ; R_4=H	*A. grandifolia*[197]	
B385	zaphaprinin H	R_1=*α*-H; R_2=Me; R_3=2*R*,3*R*-Hmp ; R_4=H	*A. grandifolia*[197]	
B386	zaphaprinin I	R_1=*α*-H; R_2=Et; R_3=2*R*,3*R*-Hmp ; R_4=H	*A. grandifolia*[197]	Insecticidal activity
B387	zaphaprinin J	R_1=b-H; R_2=H; R_3=^{i}Val(*R*-OH); R_4=H	*A. grandifolia*[197]	
B388	zaphaprinin K	R_1=b-H; R_2=Et; R_3= ^{i}Val(*R*-OH); R_4=H	*A. grandifolia*[197]	
B389	zaphaprinin L	R_1=*α*-H; R_2=H; R_3= ^{i}Val(*R*-OH); R_4=H	*A. grandifolia*[197]	
B390	zaphaprinin M	R_1=*α*-H; R_2=Me; R_3= ^{i}Val(*R*-OH); R_4=H	*A. grandifolia*[197]	
B391	zaphaprinin N	R_1=*α*-H; R_2=Et; R_3= ^{i}Val(*R*-OH); R_4=H	*A. grandifolia*[197]	Insecticidal activity
B392	zaphaprinin O	R_1=*α*-H; R_2=H; R_3=^{i}Val; R_4=H	*A. grandifolia*[197]	
B393	zaphaprinin P	R_1=H; R_2=2*R*,3*R*-Hmp ; R_3=O	*A. grandifolia*[197]	
B394	zaphaprinin Q	R_1=Me; R_2=2*R*,3*R*-Hmp ; R_3=O	*A. grandifolia*[197]	
B395	zaphaprinin R	R_1=Me; R_2=2*R*,3*R*-Hmp ; R_3=OAc	*A. grandifolia*[197]	Insecticidal activity
B396	zaphaprinin S	R_1=Et; R_2=2*R*,3*R*-Hmp ; R_3=OAc	*A. grandifolia*[197]	Insecticidal activity
B397	zaphaprinin T	R_1=Et; R2=2*R*,3*R*-Hmp ; R_3=OH	*A. grandifolia*[197]	
B398	zaphaprinin U	R_1=H; R_2= ^{i}Val(*R*-OH); R_3=O	*A. grandifolia*[197]	
B399	zaphaprinin V	R_1=Me; R_2= ^{i}Val(*R*-OH); R_3=O	*A. grandifolia*[197]	
B400	zaphaprinin W	R_1=Et; R_2= ^{i}Val(*R*-OH); R_3=O	*A. grandifolia*[197]	
B401	zaphaprinin X	R_1=H; R_2=^{i}Val; R_3=O	*A. grandifolia*[197]	
B402	zaphaprinin Y	R_1=Me; R_2=^{i}Val; R_3=O	*A. grandifolia*[197]	

S1.2.6 Rings B,D-*seco* limonoids (B403-B457)

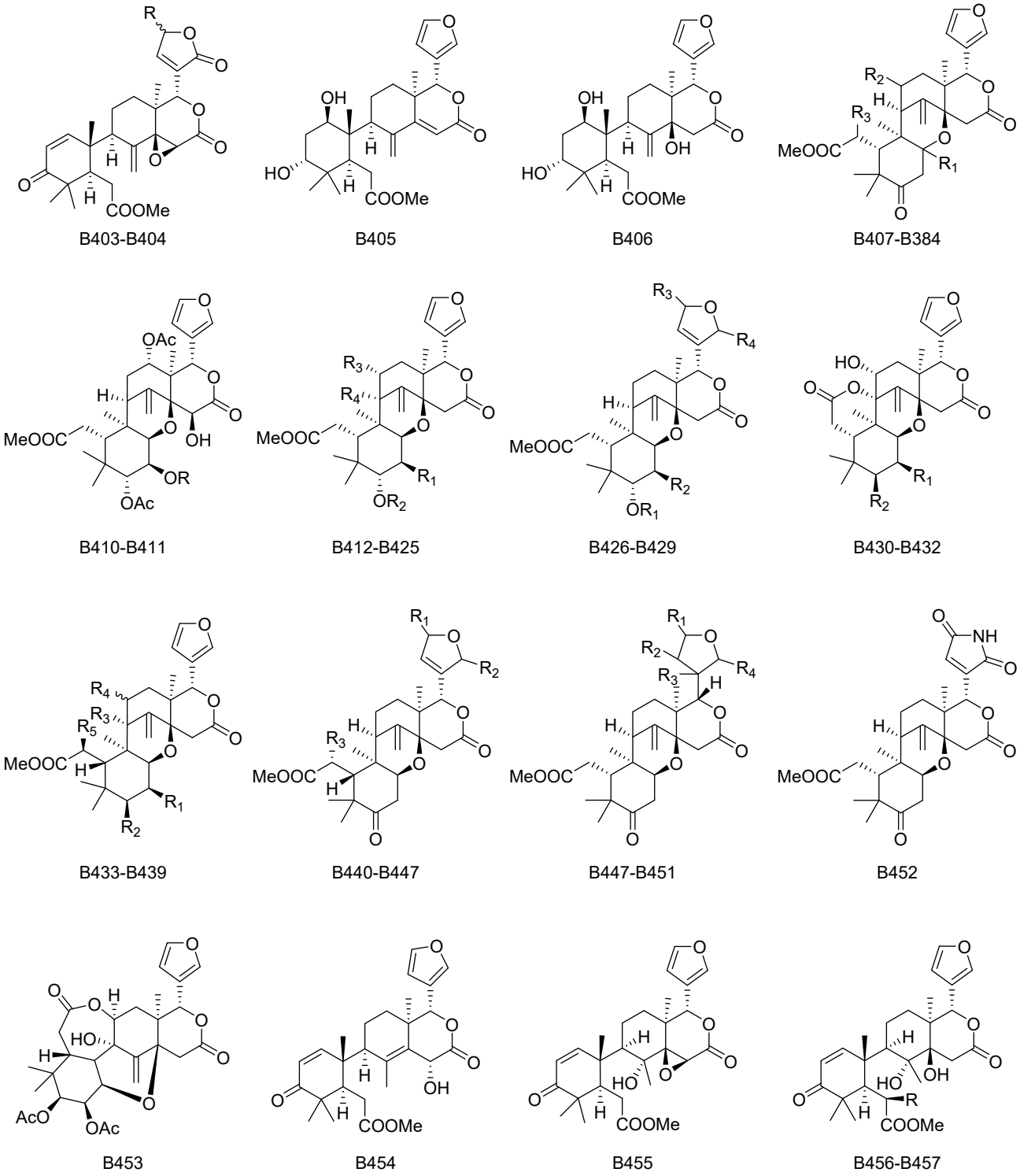


Figure S1.10 Structures of rings B, D-*seco* limonoids **B403**-**B457**

Table S1.9 Structures and sources of rings B, D-*seco* limonoids **B403**-**B457**

no	Compounds	Substitution groups and others	Sources	Bioactivity

B403	andirolide S	R=OEt	*Carapa guianensis*[85]	Cytotoxicity
B404	23-*O*-deethylanderolide S	R=OH	*Entandrophragma angolense*[194]	
B405	khasenegasin Y		*Khaya senegalensis*[190]	
B406	khasenegasin Z		*K. senegalensis*[190]	Neuroprotective
B407	entangolensin C	R_1=*α*-H; R_2=*α*-OH; R_3=H	*Entandrophragma angolense*[98]	
B408	entangolensin D	R_1=*β*-H; R_2=*β*-OH; R_3=H	*E. angolense*[98]	
B409	ivorenoid F	R_1=*α*-H ; R_2=*α*-OH; R_3=OH	*Khaya ivorensis*[199]	Cytotoxicity
B410	sanjecumin A	R=Piv	*Sandoricum koetjape*[200]	
B411	sanjecumin B	R=^{i}Bu	*S. koetjape*[200]	
B412	cipaferen E	R_1=OH; R_2=Piv; R_3= R_4=H	*Cipadessa baccifera*[202]	Cytotoxicity
B413	cipaferen F	R_1=OPiv; R_2= R_3= R_4=H	*C. baccifera*[202]	Cytotoxicity
B414	cipaferen G	R_1= R_3= R_4=H; R_2=Ac	*C. baccifera*[202]	Cytotoxicity
B415	cipaferen N	R_1= R_3= R_4=H; R_2=Tig	*C. baccifera* [202]	
B416	koetjapin A	R_1= R_4=H; R_2=Ac; R_3=OH	*Sandoricum koetjape* [203]	
B417	koetjapin B	R_1= R_3=H; R_2=Ac; R_4=OH	*S. koetjape*[203]	
B418	koetjapin C	R_1=H; R_2=Ac; R_3= R_4=OH	*S. koetjape*[203]	
B419	cibacciferin A	R_1=^{i}Bu; R_2= R_4=H; R_3=OH	*Cipadessa baccifera*[204]	Antimalarial
B420	11*α*-acetoxycibacciferin A	R_1=^{i}Bu; R_2=H; R_3=OH; R_4=OAc	*C. baccifera*[204]	
B421	cibacciferin B	R_1=*R*-Piv; R_2= R_3=H; R_4=OH	*C. baccifera*[204]	
B422	2′-epi-cibacciferin B	R_1=*S*-Piv; R_2=R_3=H; R_4=OH	*C. baccifera*[204]	
B423	cibacciferin C	R_1=*R*-Piv; R_2= R_4=H; R_3=OH	*C. baccifera*[204]	Antimalarial
B424	2′-epi-cibacciferin C	R_1=*S*-Piv; R_2= R_4=H; R_3=OH	*C. baccifera*[204]	Antimalarial
B425	11*α*-acetoxycibacciferin C	R_1=*R*-Piv; R_2=H; R_3=OH; R_4=OAc	*C. baccifera*[204]	Antimalarial
B426	cipaferen H	R_1=H; R_2=OPiv; R_3=OH; R_4=O	*C. baccifera*[201]	Cytotoxicity
B427	cipaferen I	R_1=Ac; R_2=H; R_3=OH; R_4=O	*C. baccifera*[201]	Cytotoxicity
B428	cipaferen J	R_1=Ac; R_2=H; R_3=O; R_4=OH	*C. baccifera*[201]	Cytotoxicity
B429	cinerascenoid C	R_1=Piv; R_2= R_3=OH; R_4=O	*C. cinerascensa*[205]	
B430	cipacinoid E	R_1=OH; R_2=OAc	*C. cinerascens*[136]	
B431	cipacinoid F	R_1=OAc; R_2=OH	*C. cinerascens*[136]	
B432	cipacinoid G	R_1=H; R_2=OH	*C. cinerascens*[136]	
B433	cipacinoid H	R_1= R_3=OH; R_2=OAc; R_4=*α*-OH; R_5=H	*C. cinerascens*[136]	
B434	cipacinoid I	R_1= R_3=OH; R_2=OAc; R_4=*β*-OH; R_5=H	*C. cinerascens*[136]	
B435	cipacinoid G	R_1= R_2=OAc; R_3=OH; R_4=*β*-OH; R_5=H	*C. cinerascens*[136]	
B436	cipacinoid K	R_1= R_2= R_3=OH; R_4=*α*-OH; R_5=H	*C. cinerascens*[136]	
B437	cipacinoid L	R_1= R_3=OH; R_2=OAc; R_4= R_5=H	*C.cinerascens*[136]	
B438	cipacinoid M	R_1= R_2= R_3=OH; R_4=R_5=H	*C. cinerascens*[136]	
B439	cibacciferin D	R_1= R_2=OAc; R_3=OH; R_4=H; R_5=OH	*C. baccifera*[204]	

B440	andirolide W	R_1=OEt; R_2=O; R_3=H	*Carapa guianensis*[206]	
B441	xylomolin N	R_1=O; R_2= R_3=H	*Xylocarpus moluccensis* [207]	
B442	khaysenelide K	R_1= R_3=OH; R_2=O	*Khaya senegalensis*[208]	Anti-inflammatory
B443	6-deacetoxydomesticulide D	R_1=O; R_2=OH; R_3=H	*Entandrophragma angolense*[188]	
B444	6-deacetoxydomesticulide D 21-methylether	R_1=O; R_2=OMe; R_3=H	*E. angolense*[188]	
B445	entangolensin E	R_1=O; R_2=*α*-OMe; R_3=H	*E. angolense*[98]	
B446	entangolensin F	R_1=OMe; R_2=O; R_3=H	*E. angolense*[98]	Cytotoxicity; Anti-inflammatory
B447	entangolensin G	R_1=*β*-OMe; R_2=*α*-OMe; R_3=H	*E. angolense*[98]	
B448	entangolensin H	R_1=*β*-OMe; R_2= R_3=*β*-OH; R_4=*α*-OMe	*E. angolense*[98]	
B449	entangolensin I	R_1=O; R_2=H; R_3=*β*-OH; R_4=*α*-OMe	*E. angolense*[98]	
B450	entangolensin J	R_1=O; R_2=H; R_3=*β*-OH; R_4=*β*-OMe	*E. angolense*[98]	
B451	entangosin	R_1=*α*-OMe; R_2= R_3=*β*-OH; R_4= *β*-OMe	*E. angolense*[188]	
B452	entangolensin K		*E. angolense*[98]	Anti-inflammatory
B453	cipaferoid A		*Cipadessa baccifera*[91]	Antimalarial
B454	entangolensin B		*Entandrophragma angolense*[98]	
B455	krishnolide K		*Xylocarpus moluccensis*[56]	
B456	swietemacrolide D	R=OH	*Swietenia macrophylla*[209]	
B457	thaimoluccensin A	R=H	*Xylocarpus moluccensis*[210]	

S1.2.7 Rings A,D-*seco* and rings A,B,D-*seco* limonoids (B458-B482)

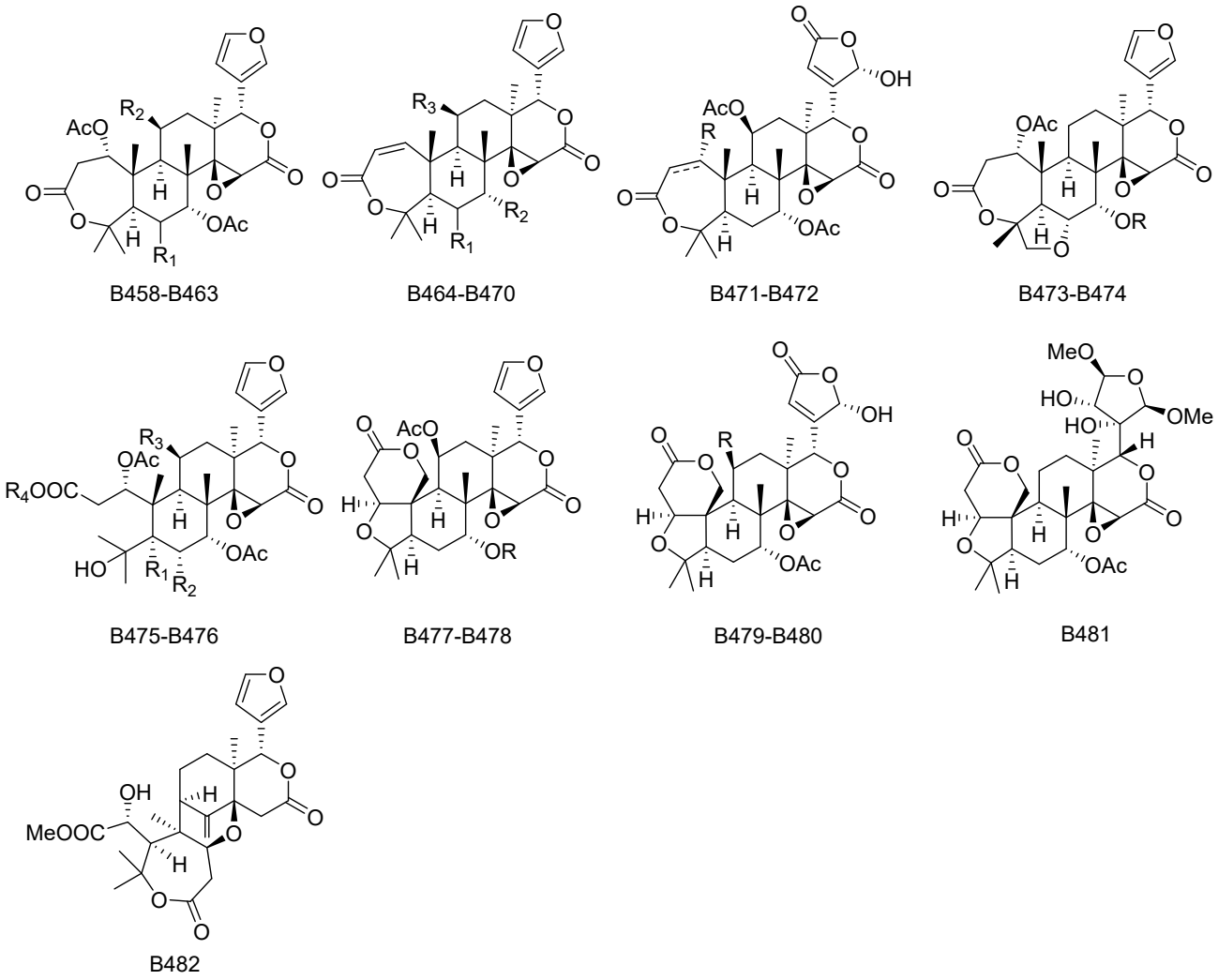


Figure S1.11 Structures of rings A, D-*seco*, **B458**-**B481**, and rings A, B, D-*seco* limonoids **B482**

Table S1.10 Structures and sources of rings A, D-*seco*, **B458**-**B481**, and rings A, B, D-*seco* limonoids **B482**

no	Compounds	Substitution groups and others	Sources	Bioactivity
B458	Toonin A	R^1=H; R^2=OAc	*Toona sinensis* [157]	
B459	aglatestine B	R_1=O; R_2=OAc	*Aglaia edulis*[43]	
B460	aglatestine C	R_1=*β*-OH; R_2=OAc	*A. edulis*[43]	
B461	aglatestine D	R_1=*β*-OAc; R_2=OAc	*A. edulis*[43]	
B462	agleduline F	R_1=*α*-OAc; R_2=OAc	*A. edulis*[161]	
B463	agleduline G	R_1=*β*-OAc; R_2=H	*A. edulis*[161]	
B464	agleduline A	R_1=*β*-OAc; R_2=*α*-OAc; R_3=OAc	*A. edulis*[161]	
B465	agleduline B	R_1=*β*-OAc; R_2=*α*-OAc; R_3=H	*A. edulis*[161]	

B466	agleduline C	R_1=*α*-OAc; R_2=*α*-OAc; R_3=OAc	*A. edulis*[161]	Cytotoxicity
B467	agleduline D	R_1= R_2=*α*-OAc; R_3=OH	*A. edulis*[161]	
B468	agleduline E	R_1=*α*-OAc; R_2=OH; R_3=OAc	*A. edulis*[161]	
B469	aglatestine E	R_1=*β*-OH; R_2=*α*-OAc; R_3=OAc	*A. edulis*[43]	Anti-inflammatory
B470	7*β*-obacunol	R_1=R_3=H; R_2=*β*-OAc	*Carapa procera* [211]	Cytotoxicity
B471	7-deoxo-7*α*,11*β*-diacetoxykihadanin A	R=H; $\Delta^{1,2}$	*C. odorata* [162]	
B472	1,2-dihydro-7-deoxo-1α,7α,11β-triacetoxykihadanin A	R=OAc	*C. odorata*[162]	
B473	dysomollide B	R=H	*Dysoxylum mollissimum*[127]	
B474	dysomollide C	R=^{i}Val(OH)	*D. mollissimum*[127]	
B475	dysomollide D	R_1=OH; R_2=OAc; R_3=H; R_4=Me	*D. mollissimum*[127]	
B476	agleduline H	R_1=R_2=H; R_3=OAc; R_4=Et	*Aglaia edulis*[161]	
B477	11*β*-acetoxylimonol	R=H	*Cedrela odorata*[162]	
B478	11*β*,7*α*-limonoldiacetate	R=Ac	*C. odorata* [212]	
B479	cedrelosin B	R=H	*C. odorata*[212]	Hsp90 inhibitory
B480	11*β*-acetoxycedrelosin B	R=OAc	*C. odorata*[162]	
B481	cedrelosin A		*C. odorata*[212]	
B482	khayseneganin D		*Khaya senegalensis*[213]	Antimicrobial

S1.3 Rearranged limonoids

S1.3.1 Mexicanolide-class limonoids (C1-C294)

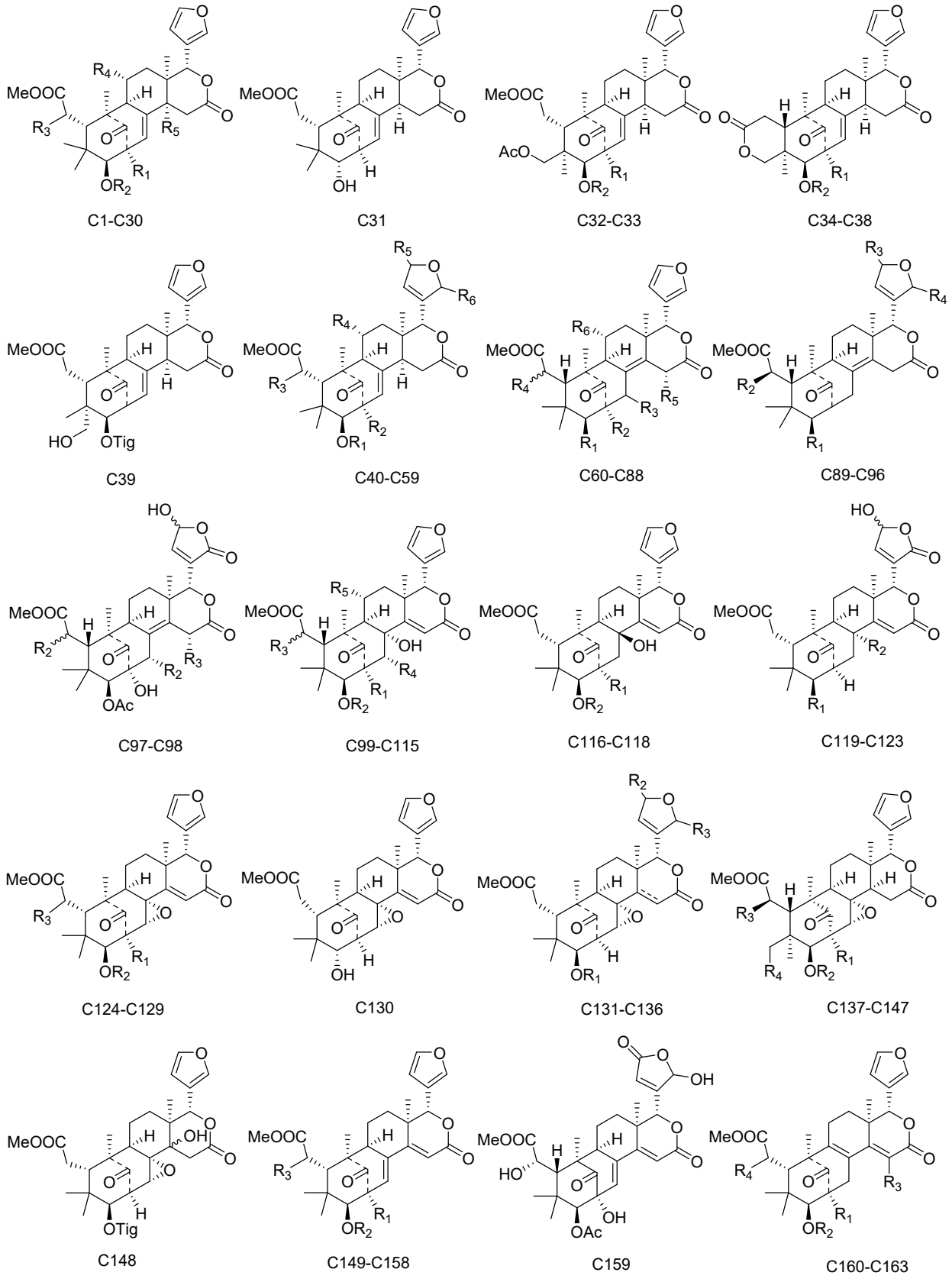


Figure S1.12 Continued

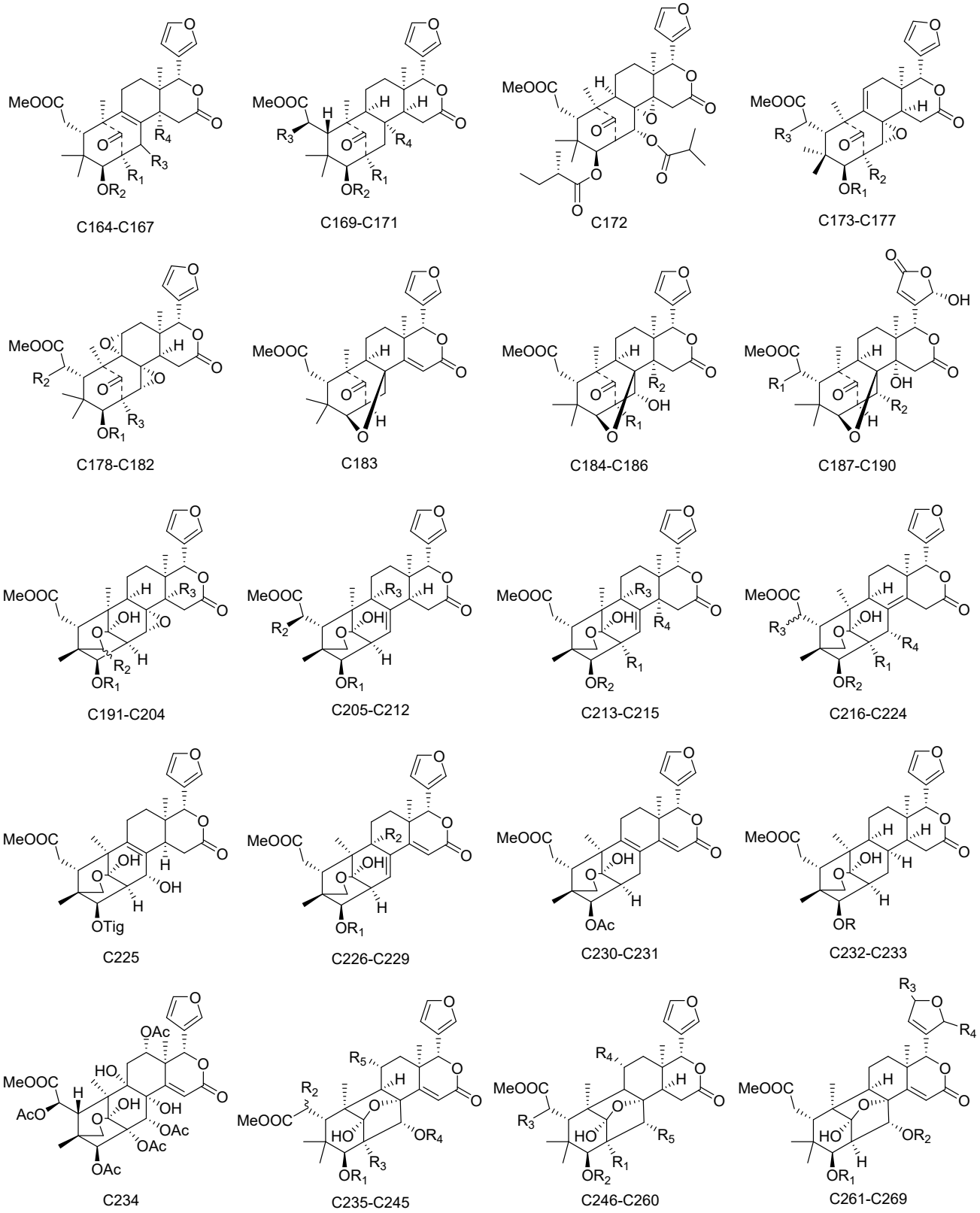


Figure S1.12 Continued

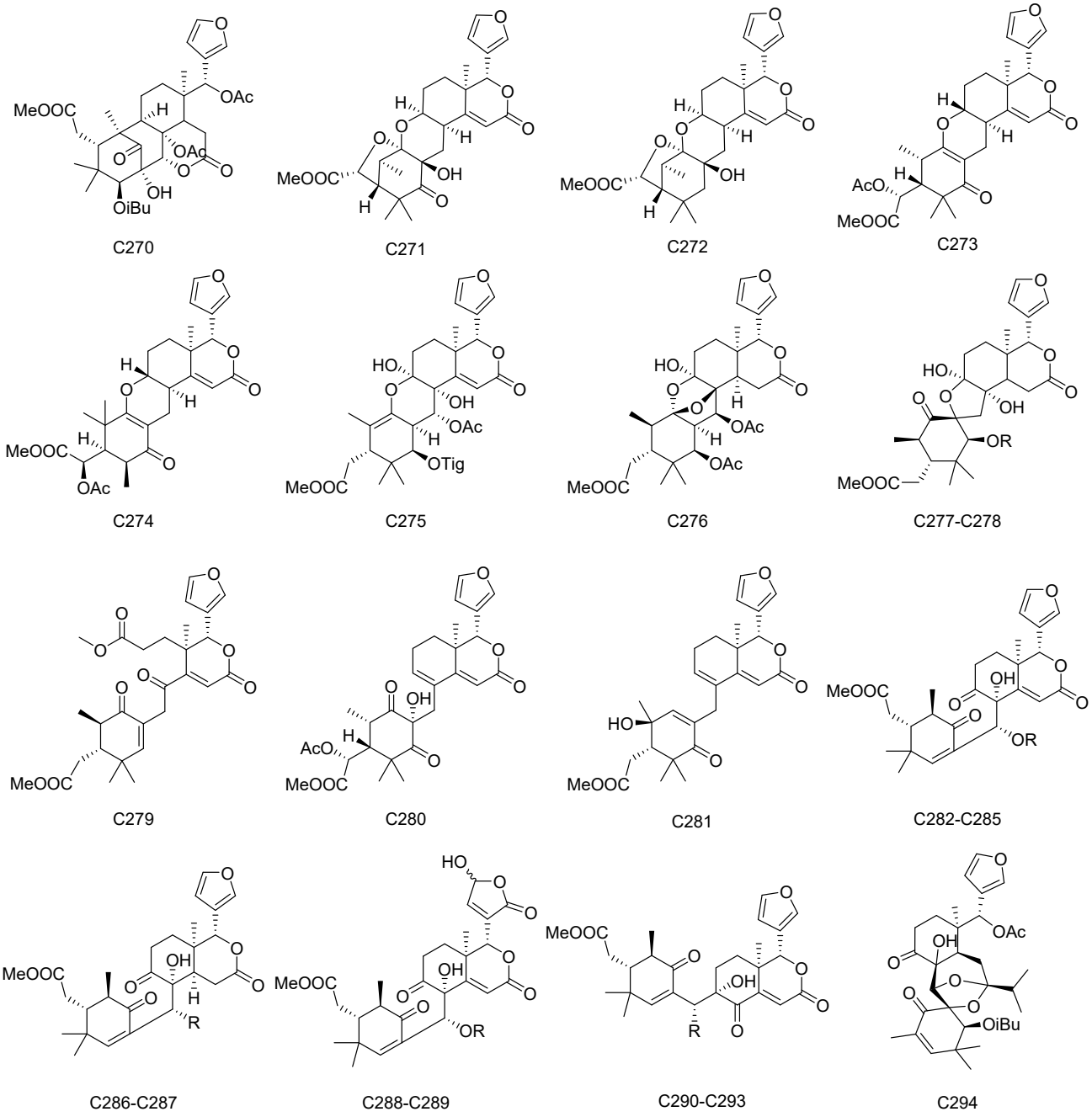


Figure S1.12 Structures of mexicanolide-class limonoids **C1-C294.**

Table S1.11 Structures and sources of mexicanolide-class limonoids **C1-C294.**

no	Compounds	Substitution groups and others	Sources	Bioactivity
C1	3-(2′-hydroxyisovaleroyl) khasenegasin I	R_1=H; R_2=^{i}Val(OH); R_3=R_4=R_5=H	*Guarea guidonia*[163]	
C2	hainanxylogranin J	R_1=OAc; R_2=Ac; R_3=OH; R_4=R_5=H	*Xylocarpus granatum*[84]	
C3	hainanxylogranin K	R_1=OAc; R_2=Ac; R_3= R_4= R_5=H	*X. granatum*[84]	Human carboxylesterase 2

				inhibitory
C4	hainanxylogranin L	R_1=H; R_2=Bz; R_3= R_4= R_5=H	*X. granatum*[84]	
C5	xylomolin E	R_1= R_5=OH; R_2=Ac; R_3=OAc; R_4=H	*X. moluccensis*[207]	
C6	granatumin H	R_1= R_3= R_4= R_5=H; R_2=^{i}Bu	*X. granatum* [215]	
C7	granatumin I	R_1= R_3= R_4= R_5=H; R_2=Met	*X. granatum* [215]	
C8	thaixylogranin E	R_1= R_4= R_5=H; R_2=^{i}Bu; R_3=OAc	*X. granatum* [215]	Cytotoxicity
C9	thaixylogranin F	R_1= R_4= R_5=H; R_2=Met; R_3=OAc	*X. granatum* [215]	Cytotoxicity
C10	6-O-Acetyl-6-dehydroxymoluccensin T	R_1=OH; R_2=^{i}Bu; R_3=OAc; R_4= R_5=H	*X. moluccensis* [217]	
C11	Humilinolide G	R_1=OAc; R_2=^{i}Bu; R_3=R_4=R_5=H	*Swietenia humilis*[218]	
C12	2-hydroxy-6-deacetoxyswietenine	R_1=OH; R_2=Tig; R_3= R_4= R_5=H	*S. mahogani*[219]	Antifeedant
C13	swieteliacate C	R_1= R_3= R_4= R_5=H; R_2=Ppy	*S. macrophylla*[85]	
C14	cipadessain A	R_1= R_3= R_5=H; R_2=Tig; R_4=OH	*Cipadessa cinerascens* [220]	
C15	cipadessain B	R_1= R_3= R_4=H; R_2=^{i}Bu; R_5=OH	*C. cinerascens*[220]	
C16	3-de(2-methylbutanoyl)-3-propanoylcipadesin	R_1= R_3= R_4= R_5=H; R_2=Ppy	*C. cinerascens* [221]	
C17	khasenegasin A	R_1= R_3=H; R_2=Ac; R_4=OAc; R_5=α-OH	*Khaya senegalensis* [222]	
C18	khasenegasin B	R_1= R_2=R_3=H; R_4=OAc; R_5=α-OH	*K. senegalensis* [222]	
C19	khasenegasin C	R_1=R_3= R_4=H; R_2=Ac; R_5=α-OH	*K. senegalensis* [222]	
C20	khasenegasin D	R_1= R_2=R_3= R_4=H; R_5=α-OH	*K. senegalensis* [222]	
C21	khasenegasin E	R_1= R_2=R_3= R_4=H; R_5=β-OH	*K. senegalensis* [222]	
C22	khasenegasin F	R_1=OH; R_2=R_3= R_4= R_5=H	*K. senegalensis* [222]	Neuroprotective
C23	khasenegasin G	R_1=OH; R_2=R_3=R_5=H; R_4=OAc	*K. senegalensis* [222]	
C24	khasenegasin H	R1= R_2=R_3=R_5=H; R_4=OH;	*K. senegalensis* [222]	
C25	khasenegasin R	R_1=R_2= R_4= R_5=H; R_3=OAc	*K. senegalensis* [191]	
C26	khasenegasin S	R_1=R_3= R_5=H; R_2=Ac; R_4=OH	*K. senegalensis* [191]	
C27	senegalenine A	R_1=R_5=OH; R_2=R_3=H; R_4=OAc	*K. senegalensis*[223]	
C28	trichiconnarone A	R_1=OH; R_2=2-butenoyl; R_3= R_4= R_5=H	*Trichilia connaroides* [224]	Anti-inflammatory

C29	trichiconnarone B	R_1=OH; R_2=Met; R_3= R_4= R_5=H	*T. connaroides* [224]	Anti-inflammatory
C30	trichinenlide A	R_1= R_4= R_5=H; R_2=Nic; R_3=OH	*T. sinensis* [225]	
C31	khasenegasin I		*Khaya senegalensis* [222]	
C32	granatumin U	R_1=H; R_2=Ac	*Xylocarpus granatum* [226]	
C33	trichinenlide W	R_1=OH; R_2=Tig	*Trichilia sinensis*[227]	AChE inhibitory
C34	trichinenlide X	R_1=OH; R_2=Tig	*T. sinensis*[227]	AChE inhibitory
C35	godavarin A	R_1=H; R_2=Tig	*Xylocarpus moluccensis* [228]	
C36	godavarin B	R_1=H; R_2=Piv	*X. moluccensis* [228]	
C37	godavarin C	R_1=H; R_2=Tig; $\Delta^{14,15}$	*X. moluccensis*[228]	
C38	moluccensin V	R_1=H; R_2=Ac	*X. moluccensis* [229]	
C39	xylocartin C		*X. granatum*[230]	
C40	3-O-detigloyl-3-O-isobutyrylfebrifugin A	R_1=^{i}Bu; R_2=R_3=R_4=H; R_5=*α*-OH; R_6=O	*Cipadessa baccifera* [231]	Cytotoxicity, AChE inhibitory
C41	3-O-detigloyl-3-O-isobutyryl-23-O-methylfebrifugin A	R_1=^{i}Bu; R_2=R_3=R_4=H; R_5=*α*-OMe; R_6=O	*C. baccifera*[231]	
C42	3-O-detigloyl-3-O-isobutyrylgranatumin E	R_1=^{i}Bu; R_2=R_3=R_4=H; R_5=O; R_6=*α*-OH	*C. baccifera*[231]	AChE inhibitory
C43	3-O-detigloyl-3-O-isobutyryl-21-O-methylgranatumin E	R_1=iBu; R_2=R_3=R_4=H; R_5=O; R_6=a-OMe	*C. baccifera* [231]	
C44	3-O-detigloyl-3-O-Ppypanoylgranatumin E	R_1=Ppy; R_2=R_3=R_4=H; R_5=O; R_6=*α*-OH	*C. baccifera*[231]	
C45	21-O-methylgranatumin E	R_1=Tig; R_2=R_3=R_4=H; R_5=O; R_6=*β*-OMe	*C. baccifera*[231]	AChE inhibitory
C46	21-deoxo-23-oxofebrifugin A	R_1=Tig; R_2=R_3= R_4 = R_6=H; R_5=O	*C. baccifera*[231]	
C47	3-O-detigloyl-3-O-isobutyryl-21-deoxo-23-oxofebrifugin A	R_1=^{i}Bu; R_2=R_3= R_4= R_6=H; R_5=O	*C. baccifera*[231]	
C48	cipadessain C	R_1=Tig; R_2=R_3= R_4=H; R_5=*β*-OMe;	*C. cinerascens* [220]	Anti-

		R_6=O		inflammatory;Cytotoxicity
C49	cipadessain D	R_1=Tig; R_2= R_3= R_4= R_6=H; R_5=O	*C. cinerascens* [220]	Anti-inflammatory
C50	cipadessain E	R_1=Ppy; R_2=R_3=R_4=H; R_5=OH; R_6=O	*C. cinerascens* [220]	
C51	cipaferen M	R_1=Piv; R_2=R_3=R_4=H; R_5=O; R_6=OH	*C. baccifera*[221]	Cytotoxicity
C52	khasenegasin T	R_1=R_2= R_3= R_4=H; R_5=OH; R_6=O	*Khaya senegalensis*[190]	
C53	khasenegasin U	R_1=R_2=R_4=H; R_3=OAc; R_5=OH; R_6=O	*K. senegalensis*[190]	
C54	khasenegasin V	R_1=R_2=R_3=H; R_4=OAc; R_5=OH; R_6=O	*K. senegalensis*[190]	
C55	khaysenelide G	R_1=OAc; R_2= R_4=H; R_3=*α*-OH; R_5=*β*-OMe; R_6=O	*K. senegalensis*[232]	Anti-inflammatory; Cytotoxicity
C56	khaysenelide H	R_1=R_4=OAc; R_2=R_3=H;R_5=OH; R_6=O	*K. senegalensis*[232]	
C57	khaysenelide I	R_1=R_4=OAc; R_2=R_3=H; R_5=O; R_6=OH	*K. senegalensis*[232]	
C58	trichanolide D	R_1=Tig; R_2=R_6=OH; R_3=R_4=H; R_5=O	*Trichilia connaroides*[234]	Anti-inflammatory
C59	trichanolide E	R_1=Tig; R_2=R_5=OH; R_3=R_4=H; R_6=O	*T. connaroides*[234]	Anti-inflammatory
C60	xylomolin A1	R_1=O^{i}Bu; R_2=OH; R_3=R_5=R_6=H R_4=OAc	*Xylocarpus moluccensis* [207]	
C61	xylomolin A2	R_1=OPpy; R_2= R_4=OH; R_3= R_5= R_6=H	*X. moluccensis* [207]	
C62	xylomolin A3	R_1=OPiv; R_2=OH; R_3=*α*-OH R_4=OH; R_5= R_6=H	*X. moluccensis*[207]	
C63	xylomolin A4	R_1=OPiv; R_2=R_4=R_5=OH; R_3=*α*-OH; R_6=H	*X. moluccensis* [207]	
C64	xylomolin A5	R_1=R_4=OAc; R_2=OH; R_3=*α*-OH; R5=H	*X. moluccensis* [207]	
C65	xylomolin A6	R_1=OAc; R_2=Ac; R_3=R_5=R_6=H R_4=OH	*X. moluccensis* [207]	
C66	xylomolin A7	R_1=OAc; R_2=Ac; R_3=R_4=R_5= R_6=H	*X. moluccensis* [207]	
C67	godavarin O	R_1=OPiv; R_2=OH; R_3=*α*-OH; R_4=*β*-OH; R_5= R_6=H	*X. moluccensis*[234]	
C68	thaixylomolin U	R_1=R_2=OH; R_3=R_5=R_6=H; R_4=*β*-OAc	*X. moluccensis*[235]	Human carboxylesterase 2 inhibitory
C69	moluccensin R	R_1=O^{i}Bu; R_2=OH; R_3=R_5=R_6=H; R_4=*β*-OH	*X. moluccensis*[229]	Antifeedant

C70	moluccensin S	R_1=OPiv; R_2=OH; R_3=R_5=R_6=H; R_4=*β*-OH	*X. moluccensis*[229]	
C71	godavarin J	R_1=OAc; R_2=R_3=R_4=R_6=H; R_5=OH	*X. moluccensis*[228]	
C72	6-*O*-acetyl-2*α*-hydroxymexicanolide	R_1=O; R_2=OH; R_3=R_5=H; R_4=OAc	*X. moluccensis*[216]	
C73	senegalenine B	R_1=R_2=R_5=OH; R_3=R_4=H; R_6=OAc	*Khaya senegalensis*[223]	
C74	khasenegasin J	R_1= R_2=R_5=OH; R_3=R_4=R_6=H	*K. senegalensis*[222]	
C75	khasenegasin K	R_1= R_5=OH; R_2=R_3=R_4=R_6=H	*K. senegalensis*[222]	
C76	khasenegasin L	R_1=OAc; R_2=R_4=R_5=R_6=H; R_3=*β*-OH	*K. senegalensis*[222]	
C77	trichinenlide L	R_1=OTig; R_2=OH; R_3=*α*-OAc; R_4=R_6=H; R_5=OAc	*Trichilia sinensis*[225]	
C78	trichinenlide M	R_1=OTig; R_2=R_5=OH; R_3=*α*-OAc; R_4=OAc; R_6=H	*T. sinensis*[225]	
C79	trichinenlide N	R_1=OTig; R_2=R_5=OH; R_3=*α*-OAc; R_4= R_6=H	*T. sinensis*[225]	
C80	trichinenlide O	R_1=O^{i}Bu; R_2=OH; R_3=*α*-OAc; R_4= R_5=OAc; R_6=H	*T. sinensis* [225]	
C81	trichinenlide P	R_1=OPiv; R_2=OH; R_3=*α*-OAc; R_4= R_5=OAc; R_6=H	*T. sinensis*[225]	
C82	trichinenlide Q	R_1=OTig; R_2=OH; R_3=*α*-O^{i}Bu; R_4= R_6=H; R_5=OH	*T. sinensis*[225]	
C83	trichinenlide R	R_1=OTig; R_2=OH; R_3=*α*-OAc; R_4=OAc; R_5=OTig; R_6=H	*T. sinensis*[225]	
C84	trichinenlide S	R_1=OTig; R_2=OH; R_3=*α*-OAc; R_4=R_6=H; R_5=OTig	*T. sinensis*[225]	
C85	trichinenlide U	R_1=OTig; R_2=OH; R_3=OPiv; R_4=R_6=H; R_5=OAc	*T. sinensis* [227]	AChE inhibitory
C86	cipadessain I	R_1=OTig; R_2=R_3=R_4=R_6=H; R_5=OH	*Cipadessa cinerascens*[220]	
C87	cipadesin N	R_1=OPpy; R_2=OH; R_3=R_4=R_5=R_6=H	*C. baccifera*[144]	Cytotoxicity
C88	3-*O*-propionylproceranolide	R_1=OPpy; R_2= R_3=R_4=R_5= R_6=H	*Swietenia macrophylla*[244]	
C89	swieteliacate D	R_1= R_2= R_4=OH; R_3=O	*S. macrophylla*[85]	
C90	cipadessain J	R_1=R-OPiv; R_2=H; R_3=O; R_4=OH	*Cipadessa cinerascens*[220]	
C91	cipaferen K	R_1=OPiv; R_2=H; R_3=OH; R_4=O	*C. baccifera*[201]	Cytotoxicity
C92	cipaferen L	R_1=OTig; R_2=H; R_3=OH; R_4=O	*C. baccifera*[201]	Cytotoxicity
C93	krishnolide I	R_1=OH; R_2=H; R_3=O; R_4=*α*-OH	*Xylocarpus moluccensis*[56]	

C94	thaimoluccepimer A	R_1= R_4=O; R_2=OAc; R_3=OH	*X. moluccensis* [119]	
C95	khaysenelide A	R_1= R_4=O; R_2= R_3=OH	*Khaya senegalensis* [236]	
C96	khaysenelide B	R_1= R_4=O; R_2=OH; R_3=OMe	*K. senegalensis*[236]	
C97	trichinenlide T	R_1=Tig; R_2=OAc; R_3=OAc	*Trichilia sinensis*[225]	
C98	thaixylomolin V	R_1=Ac; R_2= R_3=H	*Xylocarpus moluccensis*[235]	
C99	thaixylomolin W	R_1=OH; R_2=Ac; R_3=*β*-OH; R_4=R_5=H	*X. moluccensis*[235]	Human carboxylesterase 2 inhibitory
C100	thaixylomolin X	R_1=OH; R_2=Ac; R_3=*β*-OAc; R_4=R_5=H	*X. moluccensis*[235]	Human carboxylesterase 2 inhibitory
C101	thaixylomolin Y	R_1=OH; R_2=H; R_3=*β*-OAc; R_4=R_5=H	*X. moluccensis* [235]	Human carboxylesterase 2 inhibitory
C102	xylomolin D	R_1= R_3=OH; R_2=Piv; R_4=R_5=H	*X. moluccensis*[207]	
C103	swieteliacate E	R_1=R_2=H R_4=R_5; R_3=*β*-OH	*Swietenia macrophylla*[85]	
C104	carapanosin E	R_1=OH; R_2=^{i}Bu; R_3=R_5=H; R_4=R-OPiv	*Carapa guianensis*[70]	Anti-inflammatory
C105	carapanosin F	R_1=OH; R_2=Tig; R_3=R_5=H; R_4=R-OPiv	*C. guianensis*[70]	
C106	carapanolide C	R_1=OAc; R_2=Piv; R_3=R_4=R_5=H	*C. guianensis* [260]	
C107	carapanolide D	R_1=OH; R_2=Piv; R_3=R_5=H; R_4=OAc	*C. guianensis* [260]	
C108	carapanolide E	R_1=H; R_2=^{i}Bu; R_3=R_4=R_5=H	*C. guianensis*[260]	
C109	carapanolide R	R_1=OH; R_2=^{i}Bu; R_3=R_5=H; R_4=OPpy	*C. guianensis* [237]	
C110	carapanolide S	R_1=OH; R_2=Tig; R_3=R_5=H; R_4=OPpy	*C. guianensis*[237]	
C111	carapanolide T	R_1=OH; R_2=^{i}Bu; R_3=R_4=R_5=H	*C. guianensis* [238]	Anti-inflammatory
C112	carapanolide U	R_1=OH; R_2=Tig; R_3=R_4=R_5=H	*C. guianensis* [238]	Anti-inflammatory
C113	andirolide X	R_1=OH; R_2=Ac; R_3=R_5=H; R_4=O^{i}Bu	*C. guianensis* [206]	
C114	andirolide T	R_1=OH; R_2=Ac; R_3=R_5=H; R_4=OPiv	*C. guianensis*[86]	Cytotoxicity
C115	andirolide Q	R_1=OH; R_2=^{i}Bu; R_3=R_4=H; R_5=OH	*Chukrasia tabularis* [239]	
C116	andirolide B	R_1=OAc; R_2=Ac	*Carapa guianensis*[183]	
C117	andirolide C	R_1=OAc; R_2=^{i}Bu	*C. guianensis*[183]	
C118	andirolide D	R_1=OAc; R_2=Tig	*C. guianensis*[183]	
C119	godavarin I	R_1=H; R_2=Ac	*Xylocarpus moluccensis*[228]	
C120	hainanxylogranin N	R_1=OTig; R_2=OH	*X. granatum*[84]	
C121	hainanxylogranin O	R_1=OPiv; R_2=OH	*X. granatum*[84]	

C122	8-hydro-14,15-en-cabralin	R_1=OAc; R_2=H	*Aphanamixis polystachya*[240]	
C123	3-deacetyl-8-hydro-cabralin-14,15-en-3-one	R_1=O; R_2=H	*A. polystachya*[240]	
C124	trichanolide G	R_1=OH; R_2=Tig; R_3=OH	*Trichilia connaroides*[241]	Antifeedant
C125	hainanxylogranin P	R_1=H; R_2=*S*-Piv; R_3=H	*Xylocarpus granatum*[84]	
C126	thaixylogranin A	R_1=H; R_2=^{i}Bu; R_3=OH	*X. granatum*[216]	Cytotoxicity
C127	thaixylogranin B	R_1=H; R_2=Ac; R_3=OAc	*X. granatum* [216]	Cytotoxicity
C128	sundarbanxylogranin B	R_1= R_3=H; R_2=Ac	*X. granatum* [242]	Anti-HIV
C129	14,15-didehydroruageanin A	R_1= R_3=H; R_2=^{i}Bu	*Khaya ivorensis*[243]	
C130	khasenegasin O		*K. senegalensis*[190]	
C131	21-oxo-23-hydroxylruageanin A	R=^{i}Bu; R_2=*α*-OH; R_3=O	*Cipadessa baccifera*[231]	
C132	3-O-detigloyl-3-O-(2′R-methylbutanoyl)-21-oxo-23hydroxylruageanin A	R=*R*-Piv; R_2=*α*-OH; R_3=O	*C. baccifera*[231]	
C133	3-O-deisobutyryl-3-O-tigloyl-14,15-dedihydro-21-oxo-23hydroxylruageanin A	R=Tig; R_2=*α*-OH; R_3=O; $\Delta^{14,15}$	*C. baccifera*[231]	
C134	cipadessain F	R_1=*R*-Piv; R_2=*β*-OMe; R_3=O	*C. cinerascens* [220]	Anti-inflammatory；Cytotoxicity
C135	cipadessain G	R_1=*S*-Piv; R_2=O; R_3=OH	*C. cinerascens*[220]	Anti-inflammatory
C136	cipadessain H	R_1=Tig; R_2=O; R_3=OH	*C. cinerascens* [220]	
C137	6-deoxyswietemahonin A	R_1= R_3=R_4=H; R_2=Ppy	*Swietenia macrophylla*[244]	
C138	swietemacrophin	R_1=OH; R_2=Tig; R_3=R_4=H	*S. macrophylla* [245]	Anti-inflammatory
C139	swielimonoid B	R_1= R_3=H; R_2=*R*-Piv; R_4=OH	*S. macrophylla* [246]	Anti- DENV-2
C140	humilinolide H	R_1=OAc; R_2=^{i}Bu; R_3= R_4=H	*S. humilis* [218]	
C141	trichisin I	R_1=OH; R_2=R_3=R_4=H	*Heynea trijuga*[126]	
C142	trichanolide	R_1=OH; R_2=Ppy; R_3=R_4=H	*Trichilia connaroides*[247]	

C143	trichinenlide F	R_1=OH; R_2=Nic; R_3=R_4=H	*T. sinensis* [225]	
C144	trichinenlide G	R_1=OH; R_2=Nic; R_3=OAc; R_4=H	*T. sinensis* [225]	
C145	trichinenlide H	R_1= R_3=OH; R_2=Cro; R_4=H	*T. sinensis* [225]	
C146	trichinenlide V	R_1=OH; R_2=Tig; R_3=OAc; R_4=H	*T. sinensis* [227]	AChE inhibitory
C147	thaixylogranin C	R_1=R_3= R_4=H; R_2=Met	*Xylocarpus granatum* [216]	Cytotoxicity
C148	14-hydroxy-14,15-dihydrogranatumin C		*X. granatum*[129]	
C149	hainanxylogranin M	R_1=OAc; R_2=Ac; R_3=H	*X. granatum*[84]	
C150	xylomolin C1	R_1= R_3=OH; R_2=Ac	*X. moluccensis* [207]	
C151	xylomolin C2	R_1=OH; R_2=Piv; R_3=H	*X. moluccensis* [207]	
C152	thaixylogranin G	R_1=H; R_2=Ac; R_3=OH	*X. granatum*[216]	Cytotoxicity
C153	thaixylogranin H	R_1=H; R_2=Piv; R_3=OH	*X. granatum* [216]	Cytotoxicity
C154	moluccensin T	R_1=OH; R_2=^{i}Bu; R_3=*β*-OH	*X. moluccensis*[229]	
C155	moluccensin U	R_1=OH; R_2=Piv; R_3=*β*-OH	*X. moluccensis* [229]	
C156	trichanolide F	R_1=OH; R_2=Tig; R_3=OH	*Trichilia connaroides*[241]	Antifeedant
C157	swielimonoids A	R_1=H; R_2=Tig; R_3=*β*-OH	*Swietenia macrophylla*[246]	
C158	3-O-methylbutyrylseneganolide A	R_1= R_3=H; R_2=^{i}Val	*Khaya ivorensis* [243]	Cytotoxicity
C159	khaysenelides J		*K. senegalensis* [232]	
C160	krishnolide H	R_1=OH; R_2=^{i}Bu; R_3= R_4=H	*Xylocarpus moluccensis*[56]	
C161	mahagoloid D	R_1=OAc; R_2=Tig; R_3=OH; R_4=H	*Swietenia mahagoni*[248]	
C162	xylomolin B1	R_1=OH; R_2=Ac; R_3=H; R_4=OAc	*Xylocarpus moluccensis* [207]	
C163	xylomolin B2	R_1= R_2= R_3=H; R_4=OAc	*X. moluccensis*[207]	
C164	cipadessain K	R_1=Tig; R_2=*α*-OH; R_3=H	*Cipadessa cinerascens* [220]	
C165	senegalenine C	R_1=OH; R_2=R_3=H; R_4=OH	*Khaya senegalensis*[223]	
C166	khasenegasin M	R_1=R_2=R3=H; R_4=OH	*K. senegalensis* [222]	
C167	khasenegasin N	R_1=R_2=R_4=H; R_3=*β*-OH	*K. senegalensis* [222]	
C168	khasenegasin Q	R_1=Ac; R_2=*α*-OH; R_3=H	*K. senegalensis* [190]	
C169	swietemacrolide A	R_1= R_4=H; R_2=^{i}Bu; R_3=OAc	*Swietenia macrophylla*[209]	
C170	swietemacrolide B	R_1= R_4=H; R_2=Met; R_3=OAc	*S. macrophylla*[209]	
C171	khasenegasin P	R_1= R_4=OH; R_2=Ac; R_3=H	*Khaya senegalensis* [190]	
C172	xylorumphiin L		*X. rumphii* [249]	
C173	cipadesin O	R_1=Piv; R_2= R_3=H	*Cipadessa baccifera* [144]	
C174	trichinenlide B	R_1=Cro; R_2=OH; R_3=H	*Trichilia sinensis*[225]	Anti-inflammatory
C175	trichinenlide C	R_1=Cro; R_2= R_3=OH	*T. sinensis* [225]	Anti-inflammatory
C176	trichinenlide D/Trichanolide B	R_1=Tig; R_2=OH; R_3=H	*T. sinensis* [225]*; T. connaroides*[233]	Anti-inflammatory
C177	trichinenlide E	R_1=Tig; R_2=R_3=OH	*T. sinensis* [225]	
C178	trichinenlide I	R_1=Tig; R_2=H; R_3=OH	*T. sinensis* [225]	

C179	trichinenlide J	R_1=Cro; R_2=H; R_3=OH	*T. sinensis*[225]	
C180	trichinenlide K	R_1=Tig; R_2=R_3=OH	*T. sinensis* [225]	
C181	Trichanolide A	R_1=Tig; R_2=H; R_3=OH	*T. connaroides* [233]	Anti-inflammatory
C182	Trichanolide C	R_1=Tig; R_2=R_3=H	*T. connaroides*[233]	Anti-inflammatory
C183	14-deoxy-Δ1415-xyloccensin K		*Chisocheton erythrocarpus*[250]	Mosquito larvicidal activity
C184	trichisin J	R_1=OH; R_2=H	*Heynea trijuga*[126]	
C185	30-deacetylxyloccensin W	R_1=R_2=H	*Neobeguea mahafalensis*[288]	
C186	xylorumphiin D	R_1= R_2=OH	*Xylocarpus rumphii*[252]	
C187	hainanxylogranin A	R_1=R_2=H	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C188	hainanxylogranin B	R_1=*β*-OAc; R_2=H	*X. granatum*[84]	
C189	hainanxylogranin C	R_1=OH; R_2=H	*X. granatum*[84]	
C190	hainanxylogranin D	R_1=H; R_2=OH	*X. granatum*[84]	
C191	sundarbanxylogranin C	R_1=Tig; R_2=*α*-OMe; R_3=H	*X. granatum* [242]	
C192	sundarbanxylogranin D	R_1=^{i}Bu; R_2=*β*-OMe; R_3=H	*X. granatum* [242]	
C193	sundarbanxylogranin E	R_1=Piv; R_2= R_3=H	*X. granatum* [242]	
C194	krishnagranatin E	R_1=Tig; R_2=*α*-OH; R_3=H	*X. granatum*[253]	
C195	krishnagranatin F	R_1=Tig; R_2=*β*-OH; R_3=H	*X. granatum* [253]	
C196	xylomexicanin J	R_1=Ac; R_2= R_3=H	*X. granatum*[51]	
C197	thaixylogranin D	R_1=Tig; R_2=*β*-OEt; R_3=H	*X. granatum* [216]	Cytotoxicity
C198	hainanxylogranin U	R_1=Piv; R_2=H; R_3=OH	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C199	hainangranatumin F	R_1=Ppy; R_2= R_3=H;	*X. granatum*[72]	
C200	moluccensin W	R_1=Tig; R_2=*β*-OMe; R_3=H	*X. moluccensis*[229]	
C201	godavarin F	R_1=^{i}Bu; R_2=R_3=H	*X. moluccensis* [228]	
C202	godavarin G	R_1=^{i}Bu; R_2=*α*-OMe; R_3=H	*X. moluccensis*[228]	
C203	granatumin P	R_1=Ac; R_2= R_3=H	*X. granatum* [226]	
C204	granatumin Q	R_1=Met; R_2= R_3=H	*X. granatum* [226]	
C205	granatumin L	R_1=Tig; R_2= R_3=H	*X. granatum* [226]	
C206	granatumin M	R_1=Piv; R_2= R_3=H	*X. granatum* [226]	
C207	thaigranatin A	R_1=Tig; R_2=OH; R_3=H	*X. granatum* [254]	
C208	thaigranatin B	R_1=Ppy; R_2= R_3=H	*X. granatum* [254]	
C209	granatumin	R_1=Ac; R_2=R_3=H	*X. granatum*[74, 255]	

	V/xylomexicanin H			
C210	granatumin W/xylomexicanin G	R_1=^{i}Bu; R_2= R_3=H	*X. granatum*[74, 255]	
C211	granatumin X	R_1=Met; R_2= R_3=H	*X. granatum*[255]	
C212	granatumin Y	R_1=Tig; R_2=H; R_3=OH	*X. granatum*[255]	
C213	krishnagranatin A	R_1= R_4=H; R_2=^{i}Bu; R_3=OH	*X. granatum* [253]	
C214	thaimoluccensin B	R_1=OH; R_2=Ac; R_3= R_4=H	*X. moluccensis*[210]	
C215	chisomicine C	R_1= R_3=H; R_2=Tig; R_4=OH	*Chisocheton ceramicus*[256]	
C216	erythrocarpine G	R_1= R_3= R_4=H; R_2=Bz	*C. erythrocarpus*[250]	
C217	erythrocarpine H	R_1= R_3= R_4=H; R_2=Cin	*C. erythrocarpus*[250]	
C218	thaigranatin C	R_1= R_3=H; R_2=Tig; R_4=OH	*Xylocarpus granatum*[254]	
C219	thaigranatin D	R_1= R_4=H; R_2=Tig; R_3=OH	*X. granatum*[254]	
C220	granatumin N	R_1= R_3= R_4=H; R_2=Ac	*X. granatum*[226]	
C221	granatumin O	R_1= R_3= R_4=H; R_2=Met	*X. granatum*[226]	
C222	godavarin D	R_1=OH; R_2=Tig; R_3= R_4=H	*X. moluccensis* [228]	
C223	godavarin E	R_1=OH; R_2=Piv; R_3= R_4=H	*X. moluccensis* [228]	
C224	swietemacrolide C	R_1= R_2= R_4=H; R_3=*β*-OH	*Swietenia macrophylla*[209]	Anti-apoptotic
C225	thaigranatin E		*Xylocarpus granatum* [254]	
C226	krishnagranatin B	R_1= Tig; R_2=H	*X. granatum* [253]	
C227	krishnagranatin C	R_1=^{i}Bu; R_2=H	*X. granatum* [253]	
C228	krishnagranatin D	R_1=Ac; R_2=OH	*X. granatum* [253]	
C229	erythrocarpine F	R_1=Bz; R_2=H	*Chisocheton erythrocarpus*[250]	
C230	granatumin T	R=Ac	*Xylocarpus granatum*[226]	
C231	godavarin K	R=Tig	*X. moluccensis*[253]	
C232	granatumin R	R=Tig	*X. granatum*[226]	
C233	granatumin S	R=^{i}Bu	*X. granatum* [226]	
C234	godavarin H		*X. moluccensis* [228]	
C235	thaixylomolin T	R_1=Ac; R_2= R_3=OH; R_4=OPiv; R_5=H	*X. moluccensis* [235]	Human carboxylesterase 2 inhibitory 2
C236	hainanxylogranin F	R_1=Tig; R_2=*α*-OH; R_3=R_5=H; R_4=OAc	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C237	hainanxylogranin G	R_1=Piv; R_2=OH; R_3=R_5=H; R_4=OAc	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C238	xylomolin F	R_1=Ac; R_2=OAc; R_3=OH; R_4=iBu; R_5=H	*X. moluccensis* [207]	
C239	xylorumphiin I	R_1=S-Piv; R_2=H; R_3=OH; R_4=*S*-Piv; R_5=H	*X. rumphii* [258]	Anti-inflammatory
C240	xylorumphiin C	R_1=*S*-Piv; R_2=R_3=R_5=H; R_4=^{i}Bu	*X. rumphii* [252]	
C241	xylomexicanin D	R_1=Ac; R_2=R_3=R_5=H; R_4=^{i}Bu	*X. granatum* [259]	
C242	carapanolide F	R_1=Tig; R_2=R_5=H; R_3=OH; R_4=*R*-	*Carapa guianensis* [260]	Cytotoxicity

		Piv		
C243	carapanolide G	R_1=Tig; R_2=R_5=H; R_3=OH; R_4=^{i}Bu	*C. guianensis* [260]	Cytotoxicity
C244	Ivorenoid G	R_1=^{i}Bu; R_2=R_4=H; R_3=OAc; R5=OH	*Chukrasia tabularis*[239]	
C245	entanutilin B	R_1=Nic; R_2=R_5=H; R_3=OH; R_4=iBu	*Entandrophragma utile* [261]	
C246	ivorenoid C	R_1= R_4=R_5=H; R_2=Ac; R_3=OH	*Khaya ivorensis*[199]	Cytotoxicity
C247	ivorenoid D	R_1=OAc; R_2=Ac; R_3=R_5=H; R_4=OH	*K. ivorensis*[199]	
C248	ivorenoid E	R_1=OH; R_2=^{i}Bu; R_3=R_5=H; R_4=OAc	*K. ivorensis*[199]	
C249	ivorenoid H	R_1=R_5=H, R_2=^{i}Bu; R_3=OAc; R_4=OH	*Chukrasia tabularis* [262]	
C250	ivorenoid I	R_1= R_4=OH; R_2=^{i}Bu; R_3=OAc; R_5=H	*C. tabularis*[262]	
C251	carapanin C	R_1=OAc; R_2=Tig; R_3= R_4= R_5=H	*Carapa guianensis* [263]	Anti-inflammatory
C252	andirolide U	R_1=OAc; R_2=^{i}Bu; R_3= R_4= R_5=H	*C. guianensis*[85]	
C253	tabulvelutin B	R1=OAc; R_2=Ac; R_3= R_4=R_5=H	*X. granatum*[84]	
C254	xylorumphiin A	R_1=OH; R_2=^{i}Bu; R_3=R_4=H; R_5=O^{i}Bu	*X. rumphii* [252]	
C255	xylorumphiin B	R_1=OH; R_2=*S*-Piv; R_3=R_4=H; R_5=O^{i}Bu	*X. rumphii* [252]	
C256	xylorumphiin E	R_1= R_3=R_4=H; R_2=^{i}Bu; R_5=O^{i}Bu	*X. rumphii* [258]	
C257	xylorumphiin F	R_1=R_3=R_4=H; R_2=^{i}Bu; R_5=*S*-Piv	*X. rumphii* [258]	
C258	2-hydroxyxylorumphiin F	R_1=OH; R_2=^{i}Bu; R_3=R_4=H; R_5=*S*-Piv	*X. rumphii*[258]	Anti-inflammatory
C259	xylorumphiin G	R_1=OH; R_2=R_5=*S*-Piv; R_3=R_4=H	*X. rumphii*[258]	
C260	xylorumphiin H	R_1=OH; R_2=Ac; R_3=R_4=H; R_5=O^{i}Bu	*X. rumphii*[258]	
C261	xylorumphiin M	R_1=*S*-Piv; R_2=^{i}Bu; R_3=OH; R_4=O	*X. rumphii*[249]	
C262	xylorumphiin N	R_1=^{i}Bu; R_2=*S*-Piv; R_3=OH; R_4=O	*X. rumphii* [249]	
C263	xylorumphiin O	R_1=*S*-Piv; R_2=*S*-Piv; R_3=OH; R_4=O	*X. rumphii*[249]	
C264	xylorumphiin P	R_1= R_2=^{i}Bu; R_3=O; R_4=OH	*X. rumphii*[249]	
C265	xylorumphiin Q	R_1=*S*-Piv; R_2=^{i}Bu; R_3=O; R_4=OH	*X. rumphii* [249]	
C266	xylorumphiin R	R_1=Ac; R_2=*S*-Piv; R_3=O; R_4=OH	*X. rumphii*[249]	
C267	hainanxylogranin E	R_1=Tig; R_2=Ac; R_3=OH; R_4=O	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C268	hainanxylogranin H	R_1=Tig; R_2=Ac; R_3=O; R_4=*α*-OMe	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C269	hainanxylogranin I	R_1=Tig; R_2=Ac; R_3=O; R_4=OH	*X. granatum*[84]	

C270	carapanin B		*Carapa guianensis*[263]	Anti-inflammatory
C271	kokosanolide A		*Lansium domesticum* [264]	Antifeedant
C272	kokosanolide C		*L. domesticum*[264]	Antifeedant
C273	xylomolone A		*Xylocarpus moluccensis*[64]	
C274	xylomolone B		*X. moluccensis*[64]	
C275	9-epixylogranatin A		*X. granatum*[129]	
C276	xylogranatumin A		*X. granatum*[129]	
C277	carapanolide A	R=^{i}Bu	*Carapa guianensis*[265]	Cytotoxicity
C278	carapanolide B	R=Tig	*C. guianensis* [265]	
C279	9-O-methyl xylogranatin R		*Xylocarpus granatum*[129]	
C280	thaixylomolin Q		*X. moluccensis*[36]	
C281	entangolensin A		*Entandrophragma angolense*[98]	
C282	hainangranatumin A	R=*R*-Piv	*Xylocarpus granatum*[73]	
C283	hainangranatumin B	R=*S*-Piv	*X. granatum*[73]	
C284	hainangranatumin C	R=Ppy	*X. granatum*[73]	
C285	xylomexicanin C	R=^{i}Bu	*X. granatum* [259]	Antiproliferative
C286	hainangranatumin D	R=OAc	*X. granatum*[72]	
C287	prexylogranatopyridine	R=H	*X. granatum*[71]	
C288	hainangranatumin E	R=*R*-Piv	*X. granatum*[72]	
C289	30-O-acetylhainangranatumin E	R=Ac	*X. granatum*[129]	
C290	hainangranatumin I	R=OPpy	*X. granatum*[72]	
C291	hainangranatumin J	R=O^{i}Bu	*X. granatum*[72]	
C292	30-O-tigloylhainangranatumin J	R=OTig	*X. granatum*[129]	
C293	xylomexicanin F	R=H	*X. granatum*[73]	Cytotoxicity
C294	entanutilin R		*Entandrophragma utile*[266]	

S1.3.2 Phragmalin-class limonoids (C295-C669)

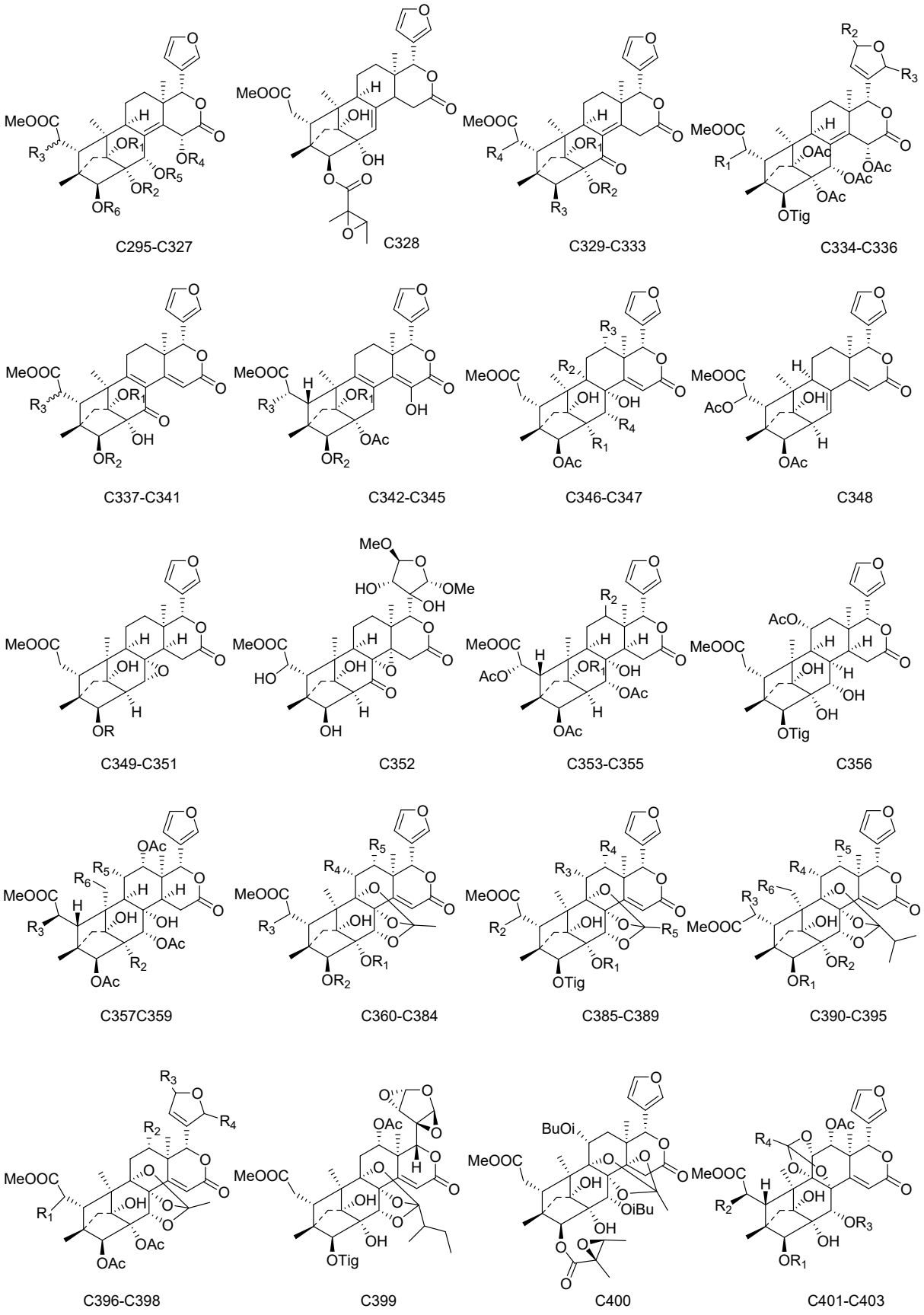
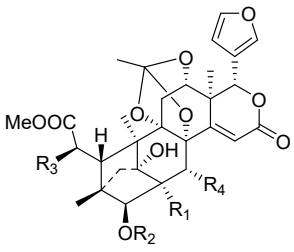
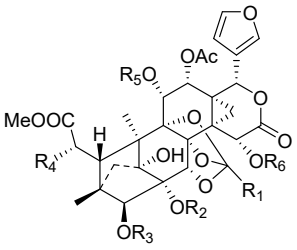
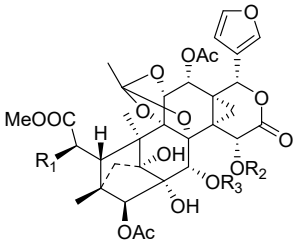


Figure S1.13 Continued


C404-C406


C407-C419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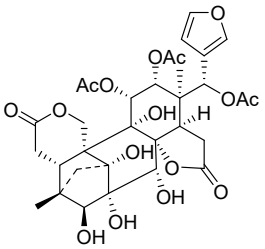
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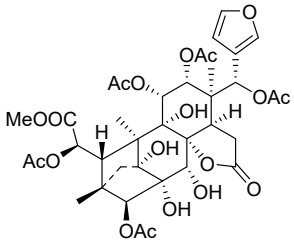
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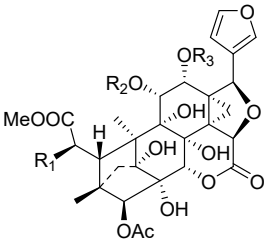
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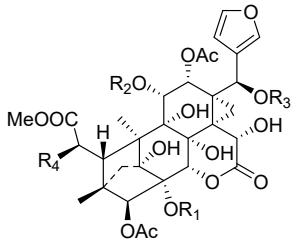
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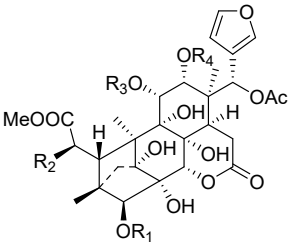
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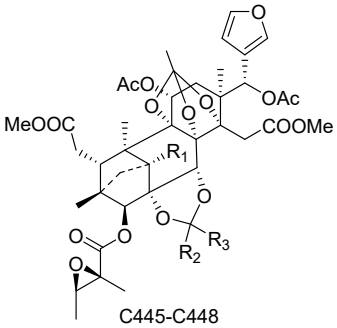
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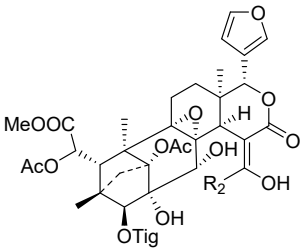
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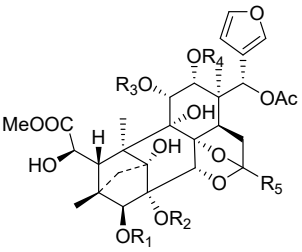
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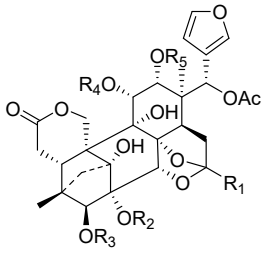
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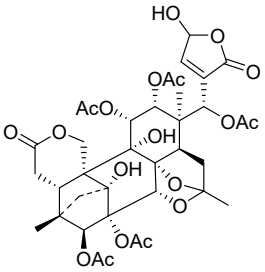
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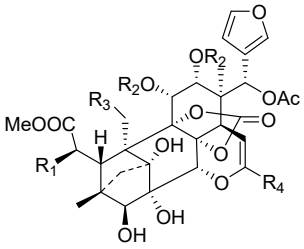
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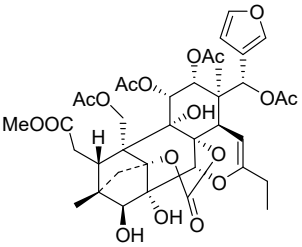
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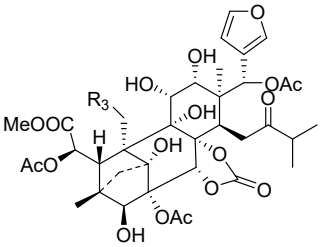
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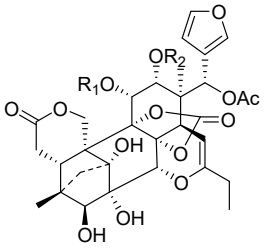
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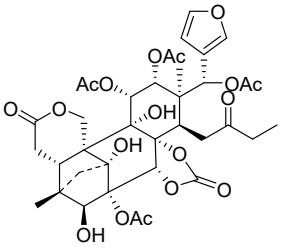
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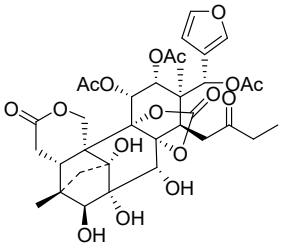
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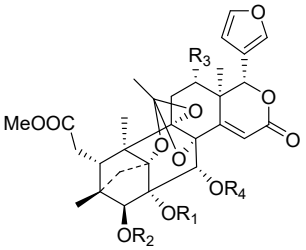
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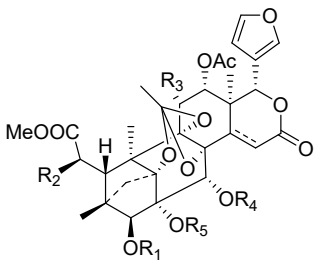

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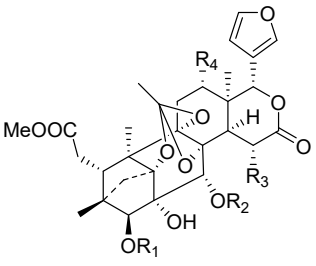

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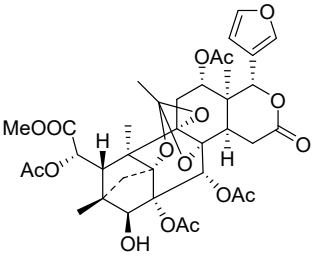

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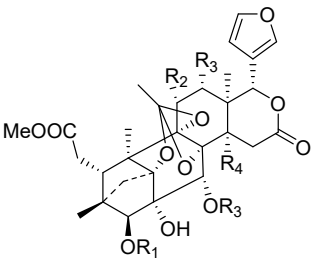

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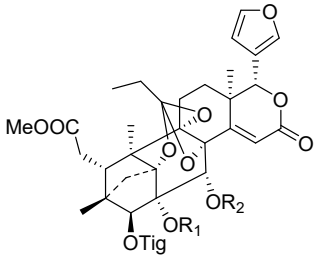

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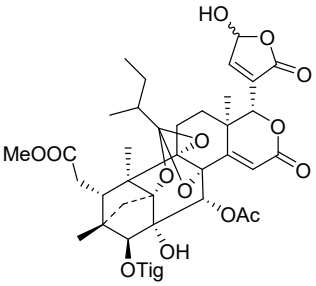

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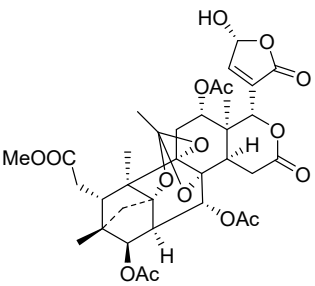

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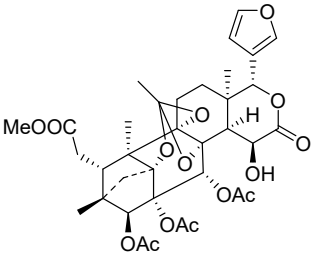

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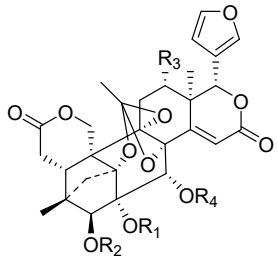

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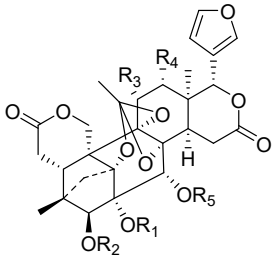

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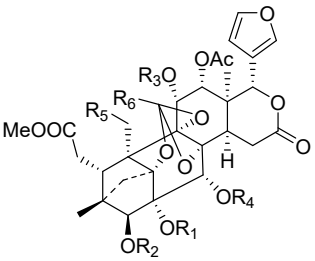

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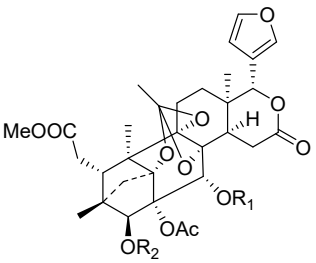

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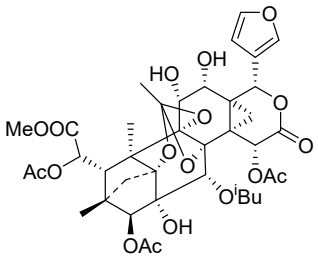

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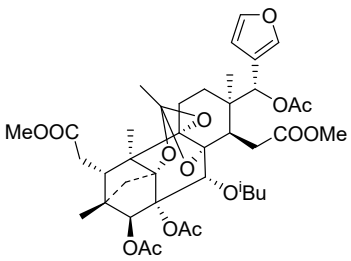

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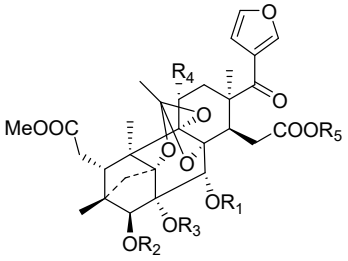

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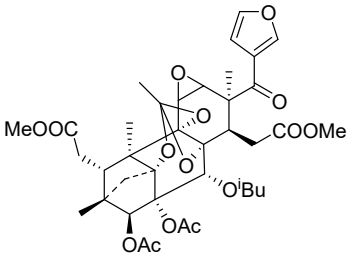

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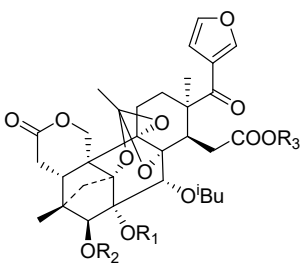

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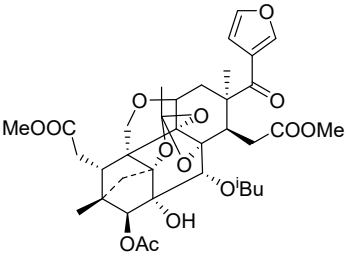

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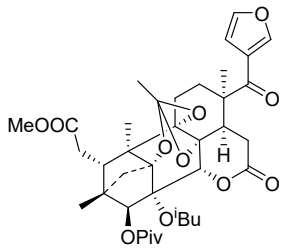

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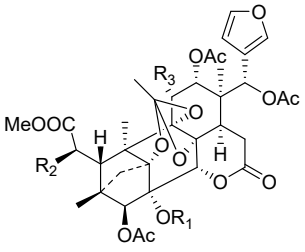

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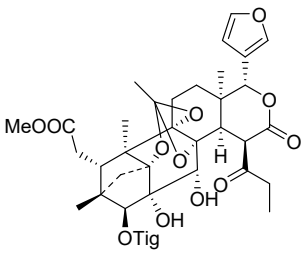

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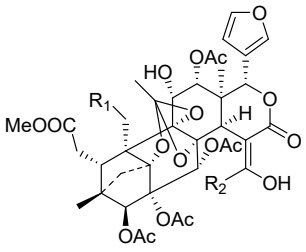

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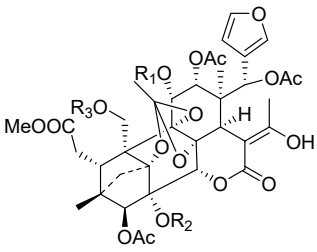

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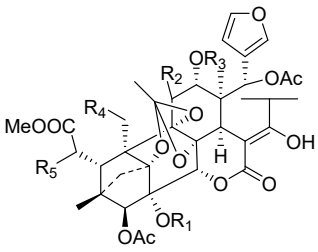

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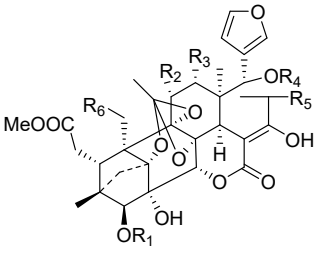

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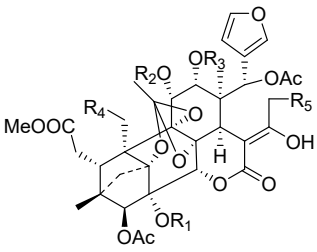

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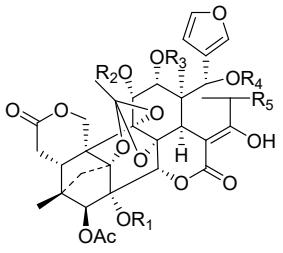

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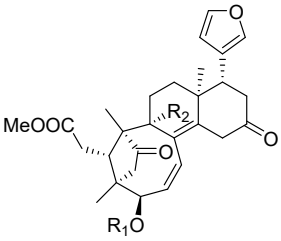

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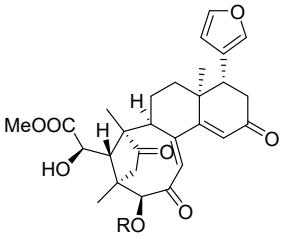

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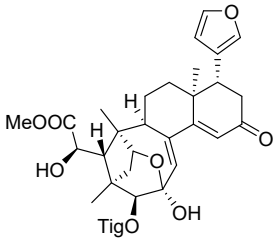

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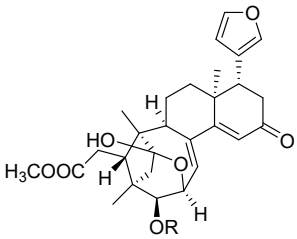

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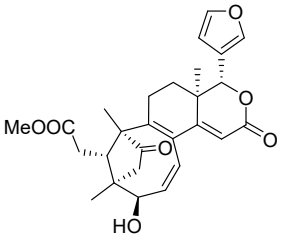

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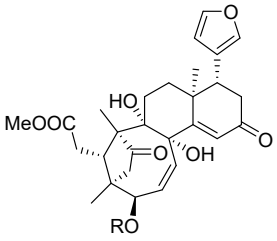

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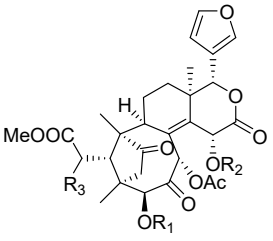

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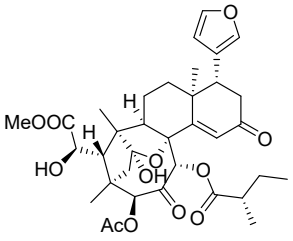

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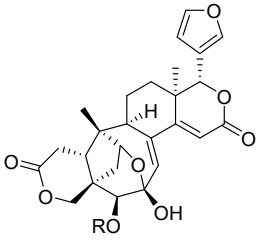

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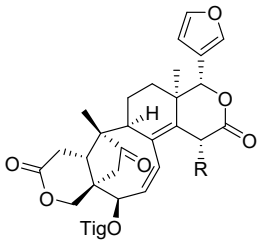

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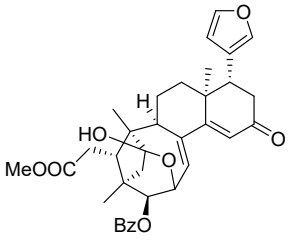

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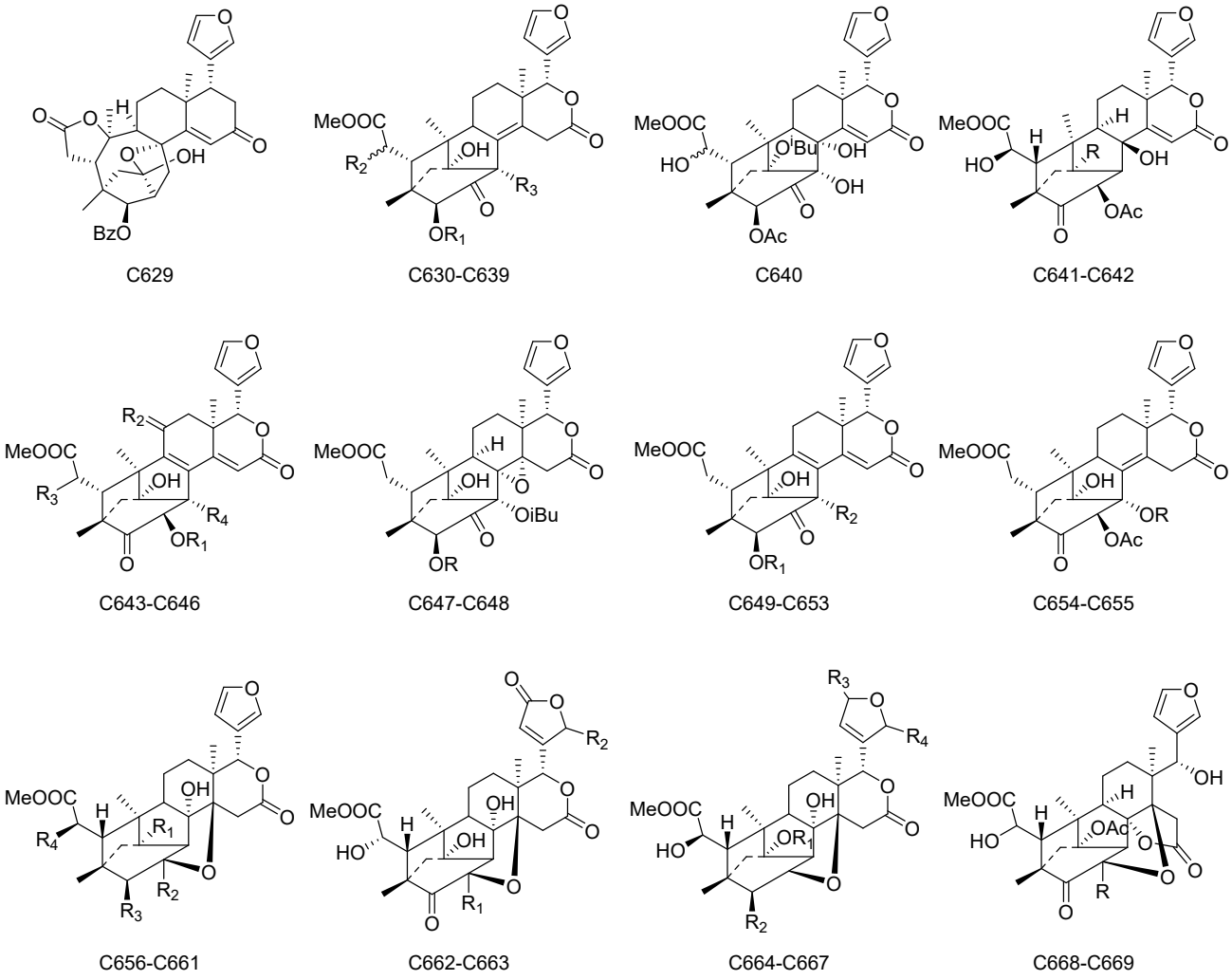


Figure S1.13 Structures of phragmalin-class limonoids **C295-C669.**

Table S1.12 Structures and sources of phragmalin-class limonoids **C295-C669.**

no	Compounds	Substitution groups and others	Sources	Bioactivity
C295	trichinelide B	R_1=H; R_2= R_4= R_5=Ac; R_3=OAc; R_6=Tig	*Trichilia sinensis* [293]	
C296	trichinelide C	R_1= R_4= R_5=Ac; R_2= R_3=H; R_6=Tig	*T. sinensis*[293]	
C297	6-deacetoxytrichinelide B	R_1= R_3=H; R_2= R_4= R_5=Ac; R_6=Tig	*T. sinensis*[293]	
C298	trichinelide D	R_1= R_2=H; R_3=OAc; R_4= R_5=Ac; R_6=Cro	*T. sinensis* [293]	PTP1B inhibitory
C299	trichinelide E	R_1= R_2=R_4=R_5=Ac; R_3=H; R_6=Met	*T. sinensis*[293]	
C300	trichinelide F	R_1= R_2=R_4=R_5=Ac; R_3=H; R_6=Nic	*T. sinensis*[293]	
C301	trichinelide G	R_1=R_2=R_3=H; R_4=^{i}Bu(OH); R_5=^{i}Bu; R_6=Tig	*T. sinensis* [293]	
C302	trichinelide H	R_1= R_2=R_3=H; R_4=Ac; R_5=^{i}Bu; R_6=Nic	*T. sinensis*[293]	
C303	trisinenmalin A	R_1= R_5=Ac; R_2=R_3=H; R_4=^{i}Bu; R_6=Tig	*T. sinensis*[292]	
C304	trisinenmalin B	R_1=R_2= R_3= R_5=H; R_4=Piv; R_6=Tig	*T. sinensis*[292]	
C305	trisinenmalin C	R_1=R_2=R_3=H; R_4=Piv; R_5=Ac; R_6=Tig	*T. sinensis* [292]	

C306	trisinenmalin E	R_1=R_2= R_5=Ac; R_3=H; R_4= R_6=^{i}Bu	*T. sinensis*[292]	
C307	trisinenmalin F	R_1=R_2=R_3=H; R_4= R_6=^{i}Bu; R_5=Ac	*T. sinensis*[292]	
C308	trisinenmalin G	R_1=R_2= R_3=H; R_4=^{i}Bu; R_5=Ac; R_6=Piv	*T. sinensis*[292]	
C309	trisinenmalin H	R_1= R_5=Ac; R_2=R_3=H; R_4= R_6=^{i}Bu	*T. sinensis*[292]	
C310	trisinenmalin I	R_1=R_2=R_3=H; R_4= R_6=^{i}Bu; R_5=Ac	*T. sinensis* [292]	
C311	carapanolide K	R_1=R_2=R_3=H; R_4=Ac; R_5=*R*-Piv; R_6=Tig	*Carapa guianensis*[185]	
C312	trichagmalin C	R_1=R_2=R_3=R_4=H; R_5=^{i}Bu; R_6=Tig	*Trichilia connaroides* [247]	
C313	15-Acetyltrichagmalin C	R_1=R_2=R_3= R_5=H; R_4=Ac; R_6=Tig	*T. connaroides* [247]	
C314	1,2-diacetyltrichagmalin C	R_1=R_2=Ac; R_3=R_4=H; R_5=^{i}Bu; R_6=Tig	*T. connaroides* [247]	
C315	trichagmalin D	R_1=R_2=R_3=H; R_4=R_5=Ac; R_6=Tig	*T. connaroides*[247]	
C316	trichagmalin E	R_1=R_2=R_5=Ac; R_3=R_4=H; R_6=Tig	*T. connaroides*[247]	
C317	15-acetyltrichagmalin E	R_1=R_2=R_4=R_5=Ac; R_3=H; R_6=Tig	*T. connaroides* [247]	
C318	trichagmalin F	R_1=R_2=R_3=R_5=H; R_4=^{i}Bu(OH); R_6=Tig	*T. connaroides*[247]	
C319	30-acetyltrichagmalin F	R_1=R_2=R_3=H; R_4=^{i}Bu(OH); R_5=Ac; R_6=Tig	*T. connaroides*[247]	
C320	1,30-diacetyltrichagmalin F	R_1=R_5=Ac; R_2=R_3=H; R_4=^{i}Bu(OH); R_6=Tig	*T. connaroides* [247]	
C321	heytrijumalin A	R_1=R_2=H; R_3=OAc; R_4=^{i}Bu(OH); R_5=iBu; R_6=Tig	*Heynea trijuga* [303]	
C322	heytrijumalin B	R_1=R_2=R_5=Ac; R_3=H; R_4=^{i}Bu(OH); R_6=Tig	*H. trijuga* [303]	Cytotoxicity
C323	heytrijumalin C	R_1=R_2= R_5=Ac; R_3=OAc; R_4=^{i}Bu(OH); R_6=Tig	*H. trijuga*[303]	
C324	heytrijumalin D	R_1= R_2=H; R_3=OAc; R_4=R_5 =Ac; R_6=Tig	*H. trijuga*[303]	
C325	heytrijumalin E	R_1= R_4=R_5=Ac; R_2=H; R_3=OAc; R_6=Tig	*H. trijuga*[303]	
C326	heytrijumalin F	R_1=R_2=R_4=R_5=Ac; R_3=OAc; R_6=Tig	*H. trijuga*[303]	
C327	heytrijumalin G	R_1=R_2=R_4=R_5=Ac; R_3=OAc; R_6=Met	*H. trijuga*[303]	
C328	soymidin E		*Soymida febrifuga* [304]	Anti-feedant
C329	godavarin L	R_1=R_2=H; R_3=OAc; R_4=OH	*Xylocarpus moluccensis*[234]	Antitumor
C330	godavarin M	R_1= R_2= R_3=H; R_4=OH	*X. moluccensis* [234]	
C331	thaixylomolin D	R_1=Tig; R_2= R_4=H; R_3=OAc	*X. moluccensis*[287]	
C332	thaixylomolin E	R_1= R_4=H; R_2=^{i}Bu; R_3=OAc	*X. moluccensis*[287]	
C333	thaimoluccensin C	R_1=^{i}Bu; R_2= R_4=H; R_3=OAc	*X. moluccensis* [210]	
C334	trichinelide I	R_1=H; R_2=OH; R_3=O	*Trichilia sinensis* [293]	
C335	trichinelide J	R_1=H; R_2=O; R_3=OH	*T. sinensis* [293]	
	6-			

	Acetoxytrichinelide J			
C337	xylomolin K1	R_1=H; R_2=Piv; R_3=OH	*Xylocarpus moluccensis* [207]	
C338	xylomolin K2	R_1=H; R_2=^{i}Bu; R_3=OH	*X. moluccensis* [207]	
C339	godavarin N	R_1=H; R_2=Piv; R_3=H	*X. moluccensis* [234]	Antitumor
C340	moluccensin X	R_1=H; R_2=^{i}Bu; R_3=H	*X. moluccensis*[229]	
C341	thaixylomolin F	R_1=^{i}Bu; R_2=Ac; R_3=H	*X. moluccensis* [287]	
C342	trichagmalin A	R_1=Ac; R_2=Tig; R_3=H	*Trichilia connaroides* [247]	
C343	trichagmalin B	R_1=Ac; R_2=Met; R_3=H	*T. connaroides* [247]	
C344	heytrijumalin H	R_1=H; R_2=Tig; R_3=OAc	*Heynea trijuga* [303]	
C345	heytrijumalin I	R_1= R_3=H; R_2=Tig	*H. trijuga* [303]	
C346	xylomexicanin K	R_1=H; R_2=OH; R_3=R_4=OAc	*Xylocarpus granatum* [288]	
C347	swietenine J	R_1=OH; R_2= R_3= R_4=H	*Swietenia macrophylla*[298]	
C348	granatumins K		*Xylocarpus granatum* [215]	
C349	chisomicine B	R=Tig	*Chisocheton ceramicus*[256]	
C350	chisomicine E	R=^{i}Bu	*C. ceramicus*[305]	
C351	chisomicine D	R=Met	*C. ceramicus* [305]	
C352	20,22-dihydroxy-21,23-dimethoxytetrahydrofuran khayanolide A		*Aphanamixis polystachya*[240]	
C353	krishnagranatin G	R_1=H; R_2=*β*-OAc	*Xylocarpus granatum* [253]	NF-κB inhibitory
C354	krishnagranatin H	R_1= R_2=H	*X. granatum* [253]	NF-κB inhibitory
C355	6-O-acetyl xylocarpin D	R_1=Ac; R_2=*α*-OAc	*X. granatum*[129]	
C356	soymidin B		*Soymida febrifuga* [306]	
C357	tabulalin H	R_1= R_3=H; R_2= R_4=OH; R_5= R_6=OAc	*Chukrasia tabularis* [267]	
C358	tabulalin I	R_1= R_6=H; R_2= R_4=OH; R_3= R_5=OAc	*C. tabularis* [267]	
C359	granatumin J	R_1=Ac; R_2= R_4=R_5=R_6=H; R_3=OAc	*Xylocarpus granatum*[215]	
C360	hainanxylogranin Q	R_1= R_3=R_4=R_5=H; R_2=Ac	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C361	granaxylocartin A	R_1= R_4=H; R_2=Ac; R_3=*α*-OH; R_5=OAc	*X. granatum* [289]	
C362	krishnagranatin I	R_1= R_2= R_4=H; R_3=*β*-OAc; R_5=OAc	*X. granatum* [253]	NF-κB inhibitory
C363	thaixylomolin Z	R_1= R_4=H; R_2=Ac; R_3=*β*-OH; R_5=OH	*X. moluccensis*[235]	Human carboxylesterase 2 inhibitory
C364	2-O-acetylthaixylomolin Z	R_1=R_2=Ac; R_3=*β*-OH; R_4=H; R_5=OH	*X. moluccensis*[235]	Human carboxylesterase 2 inhibitory
C365	xylomolin L1	R_1=R_2=Ac; R_3=OH; R_4=R_5=H	*X. moluccensis* [207]	
C366	xylomolin L2	R_1= R_3=R_4=H; R_2=Tig; R_5=OH	*X. moluccensis* [207]	

C367	12-deacetylxyloccensiU	R_1=R_3=R_4=H; R_2=Ac; R_5=OH	*X. moluccensis*[217]	
C368	2-O-Acetyl-2-dehydroxy-12-deacetylxyloccensinU	R_1=R_2=Ac; R_3=R_4=H; R_5=OH	*X. moluccensis* [217]	
C369	moluccensin Y	R_1=R_2=Ac; R_3= R_4= R_5=H	*X. moluccensis* [229]	
C370	chukvelutilide N	R_1=^{i}Bu; R_2=Ac; R_3=R_4=H; R_5=OH	*Chukrasia tabularis*[268]	
C371	tabulalide G	R_1=^{i}Bu; R_2=Ac; R_3=*α*-OH; R_4=OAc; R_5=OAc	*C. tabularis*[269]	Cytotoxicity
C372	entanutilin F	R_1=H; R_2=^{i}Bu; R_3=H; R_4=H; R_5=OAc	*Entandrophragma utile* [307]	
C373	entanutilin G	R_1=^{i}Bu; R_2= R_3= R_4=H; R_5=OAc	*E. utile*[307]	
C374	entanutilin H	R_1=^{i}Bu; R_2= R_3=H; R_4= R_5=OAc	*E. utile* [307]	
C375	andirolide G	R_1=Ppy; R_2=Ac; R_3= R_4=H; R_5=OH	*Carapa guianensis*[183]	
C376	andirolide Y	R_1=Ppy; R_2=Ac; R_3= R_5=OAc; R_4=H	*C. guianensis* [207]	
C377	carapanolide H	R_1= R_3= R_4= R_5=H; R_2=^{i}Bu	*C. guianensis* [260]	Cytotoxicity
C378	2-acetyl soymidin B	R_1=Ac; R_2=epoxytigloyl; R_3=R_5=H; R_4=OAc	*Soymida febrifuga* [304]	Antifeedant
C379	2,3-dideacetylxyloccensin S	R_1=R_2= R_4=H; R_3=OH; R_5=OAc	*Xylocarpus granatum* [290]	
C380	swietephragmin H	R_1=Ac; R_2=Tig; R_3=R_4=R_5=H	*Swietenia mahogani* [219]	Antifeedant
C381	12α-acetoxyswietephragmin I	R_1=Ac; R_2=Tig; R_3= R_4=H; R_5=OAc	*S. macrophylla* [299]	
C382	3β-O-detigloyl3β-O-benzoyl-12α-acetoxyswietephragmin I	R_1=Ac; R_2=Bz; R_3=R_4=H; R_5=OAc	*S. macrophylla*[299]	
C383	2-deacetyl-6-acetoxylswietephragmin I	R_1= R_4= R_5=H; R_2=Tig; R_3=OAc	*S. macrophylla* [299]	
C384	2-deacetyl-12α-acetoxyswietephragmin I	R_1= R_3=R_4=H; R_2=Tig; R_5=OAc	*S. macrophylla* [299]	
C385	8,9,30-orthotigloylate-swietemacrophin	R_1=R_2=R_3=H; R_4=OAc, R_5=C(CH_3)=$CHCH_3$	*S. macrophylla*[299]	
C386	6-acetoxyl-12α-deacetoxyl-8,9,30-ortho-tigloylateswietemacrophine	R_1=R_3=R_4=H;R_2=OAc;R_5=C(CH_3)=$CHCH_3$	*S. macrophylla* [299]	

C387	2-dehydroxylswieteph ragmin C	R_1=R_2=R_3=R_4=H; R_5=$CH(CH_3)CH_2CH_3$	*S. macrophylla*[300]	
C388	11-hydroxyswietephrag min B	R_1=Ac;R_2=R_4=H;R_3=OH;R_5=$CH(CH_3)CH_2CH_3$	*S. mahogani* [219]	Antifeedant
C389	swietephragmin I	R_1=Ac; R_2=R_3=R_4=H; R_5=CH_2CH_3	*S. mahogani* [219]	Antifeedant
C390	3β-O-detigloyl-3β-O-benzoyl6-O-acetylswietephragm in D	R_1=Bz; R_2= R_5=R_6=H; R_3=R_4=OAc	*S. macrophylla* [299]	
C391	entanutilin I	R_1= R_2=R_3= R_6=H; R_4=R_5=OAc	*Entandrophragma utile* [307]	
C392	entanutilin J	R_1=Nic, R_2=R_3= R_6=H; R_4=R_5=OAc	*E. utile* [307]	
C393	entanutilin K	R_1=Tig, R_2=R_3= R_4=H; R_5=R_6=OAc	*E. utile* [307]	
C394	tabulalide F	R_1=Ac; R_2=R_6=H; R_3=*β*-OH; R_4=R_5=OAc	*Chukrasia tabularis*[269]	
C395	chuktabularoid D	R1=Ac; R_2= R_6=H; R_3=*α*-OH; R_4=OH; R_5=OAc	*C. tabularis*[270]	
C396	moluccensin Z1	R_1= R_2=H; R_3=O; R_4=OMe	*C. tabularis*[271]	
C397	moluccensin Z2	R_1= R_2=H; R_3=OMe; R_4=O	*C. tabularis* [271]	
C398	hainanxylogranin T	R_1= R_2=OAc; R_3=OH; R_4=O	*Xylocarpus granatum*[84]	
C399	12α-acetoxyl20β,21β-22α,23α-diepoxyswietephrag min C		*Swietenia macrophylla* [299]	
C400	entanutilin O		*Entandrophragma utile*[266]	Anti-Multidrug resistance
C401	entanutilin Q	R_1=Nic; R_2=H; R_3=^{i}Bu; R_4=Me	*E. utile*[266]	
C402	chuktabularoid E	R_1=Ac; R_2=OH; R_3=^{i}Bu; R_4=Me	*Chukrasia tabularis*[270]	
C403	chuktabularoid F	R_1=Ac; R_2=OH; R_3=H; R_4=^{i}Pr	*C. tabularis*[270]	
C404	thaixylomolin O	R_1=OAc; R_2= R_4=Ac; R_3=H	*Xylocarpus moluccensis*[36]	
C405	thaixylomolin P	R_1=OH; R_2= R_4=Ac; R_3=H	*X. moluccensis*[36]	Antitumor
C406	chubularisin A	R_1=OH; R_2=H; R_3=OAc; R_4=^{i}Bu	*Chukrasia tabularis*[272]	
C407	chubularisin C	R_1=Et; R_2= R_3= R_4=H; R_5=Ac; R_6=^{i}Bu	*C. tabularis*[272]	
C408	chubularisin D	R_1=Me; R_2=Ppy; R_3=Ac; R_4=R_5=H; R_6=^{i}Bu	*C. tabularis*[272]	Neuroprotective
C409	chubularisin E	R_1=Me; R_2=^{i}Bu; R_3=Ac; R_4= R_5=H; R_6=^{i}Bu	*C. tabularis*[272]	
C410	chubularisin F	R_1=^{i}Pr; R_2=H; R_3=Ac; R_4=OAc; R_5= R_6=H	*C. tabularis*[272]	
C411	chubularisin G	R_1=i-Pr; R_2=H; R_3= R_5= R_6=Ac; R_4=OAc	*C. tabularis*[272]	
C412	chubularisin J	R_1=Me; R_2=H; R_3= R_5= R_6=Ac; R_4=OAc	*C. tabularis*[272]	

C413	chubularisin K	R_1=Me; R_2=H; R_3= R_6=Ac; R_4=OAc; R_5=H	*C. tabularis*[272]	
C414	chuklarisin A	R_1=Me; R_2=R_6=^{i}Bu; R_3=R_5=Ac; R_4=OAc	*C. tabularis*[274]	
C415	chukbularisin D	R_1=^{i}Pr; R_2=H; R_3= R_5= R_6=Ac; R_4=OAc	*C. tabularis*[69]	α-Glucosidase inhibitory
C416	chukbularisin E	R_1=Me; R_2=^{i}Bu; R_3=R_5=R_6=Ac; R_4=OAc	*C. tabularis*[69]	α-Glucosidase inhibitory
C417	chukvelutilide O	R_1=Me; R_2=^{i}Bu; R_3=R_6=Ac; R_4=OH; R_5=H	*C. tabularis*[268]	
C418	tabularisin S	R_1=^{i}Pr; R_2=H; R_3=R_6=Ac; R_4=OAc; R_5=H	*C. tabularis*[274]	
C419	tabularin R	R_1=^{i}Pr; R_2=H; R_3=^{i}Bu; R_4=OAc; R_5= R_6=Ac	*C. tabularis*[275]	
C420	chuklarisin B	R_1=OAc; R_2=^{i}Bu; R_3=Ppy	*C. tabularis*[274]	α-Glucosidase inhibitory
C421	chubularisin H	R_1=OAc; R_2=R_3=^{i}Bu	*C. tabularis*[272]	Neuroprotective
C422	chubularisin I	R_1=H; R_2=^{i}Bu; R_3=Ppy	*C. tabularis*[272]	
C423	chukbularisin C	R_1=H; R_2= R_3=^{i}Bu	*C. tabularis*[69]	α-Glucosidase inhibitory
C424	tabularisin T	R_1=H; R_2=Ac; R_3=Ppy	*C. tabularis*[274]	α-Glucosidase inhibitory
C425	velutabularin K	R_1=H; R_2=Ac; R_3=Ppy	*C. tabularis*[276]	Brine shrimp lethality
C426	tabulalin D		*C. tabularis* [277]	
C427	tabulalin E		*C. tabularis* [277]	Anti-inflammatory
C428	velutabularin A	R_1=H; R_2=Ppy; R_3=Ac	*C. tabularis* [278]	
C429	velutabularin B	R_1=H; R_2=^{i}Bu; R_3=Ac	*C. tabularis*[278]	Anti-inflammatory
C430	velutabularin C	R_1=OAc; R_2=Ac; R_3=^{i}Bu	*C. tabularis* [278]	
C431	velutabularin D	R_1=OAc; R_2=H; R_3=^{i}Bu	*C. tabularis* [278]	Anti-inflammatory
C432	velutabularin E	R_1=OAc; R_2=^{i}Bu; R_3=Ac	*C. tabularis*[278]	Anti-inflammatory
C433	velutabularin F	R_1=OAc; R_2=R_3=Ac	*C. tabularis*[278]	
C434	velutabularin G	R_1= H; R_2=Ac; R_3=^{i}Bu; R_4=OAc	*C. tabularis* [278]	
C435	velutabularin H	R_1=H; R_2=^{i}Bu; R_3=Ac; R_4=OAc	*C. tabularis* [278]	
C436	velutabularin I	R_1= ^{i}Bu; R_2=R_3=Ac; R_4=OAc	*C. tabularis*[278]	Anti-inflammatory
C437	velutabularin J	R_1= R_4=H; R_2=Ac; R_3=^{i}Bu	*C. tabularis*[278]	
C438	tabulalin A	R_1=Ac; R_2= R_3= R_4=H	*C. tabularis* [277]	
C439	tabulalin B	R_1=Ac; R_2=OAc; R_3= R_4=H	*C. tabularis* [277]	Anti-inflammatory

C440	tabulalin G	R_1= R_3= R_4=Ac; R_2=OH	*C. tabularis* [267]	
C441	tabulalin J	R_1= R_3= R_4=Ac; R_2=H	*C. tabularis* [279]	
C442	tabulalin K	R_1=R_2=H; R_3= R_4=Ac	*C. tabularis* [280]	
C443	tabulalin L	R_1=H; R_2=OAc; R_3= R_4=Ac	*C. tabularis* [280]	
C444	tabulalin M	R_1= R_3= R_4=Ac; R_2=OAc	*C. tabularis* [280]	
C445	swielimonoid C	R_1=OAc; R_2=*α*-Et; R_3=*α*-OMe	*Swietenia macrophylla*[246]	
C446	swielimonoid D	R_1=OAc; R_2=*β*-Et; R_3=*α*-OMe	*S. macrophylla*[246]	
C447	swielimonoid E	R_1=OH; R_2=*β*-Et; R_3=*α*-OMe	*S. macrophylla* [246]	
C448	swielimonoid F	R_1=OAc; R_2=*β*-Me; R_3=*α*-OMe	*S. macrophylla* [246]	
C449	swietenitin W	R=Me	*S. macrophylla* [301]	
C450	swietenitin X	R=Et	*S. macrophylla*[301]	
C451	velutinasin G	R_1= R_4=H; R_2=R_3=Ac; R_5=Et	*C. tabularis* [281]	NF-κB inhibitory
C452	velutinasin H	R_1=R_2=H; R_3=R_4=Ac; R_5=Me	*C. tabularis* [281]	NF-κB inhibitory
C453	chukvelutin E	R_1=R_2=Ac; R_3= R_4=H; R_5=*i*-Pr	*C. tabularis*[282]	Anti-inflammatory
C454	chuktabularin U	R_1=Me; R_2=R_3=Ac; R_4= R_5=H	*C. tabularis*[283]	Anti-inflammatory
C455	chuktabularin V	R_1=Me; R_2= R_3= R_4=Ac; R_5=^{i}Bu	*C. tabularis* [283]	
C456	chuktabularin W	R_1=Et; R_2= R_4= R_5=Ac; R_3=^{i}Bu	*C. tabularis* [283]	
C457	chuktabularin X	R_1=Et; R_2= R_3= R_4= R_5=H	*C. tabularis*[283]	
C458	chubularisin O	R_1=Me; R_2=R_3=R_4=Ac; R_5=^{i}Bu	*C. tabularis*[272]	
C459	chubularisin P	R_1=Et; R_2=H; R_3=R_4=Ac; R_5=Ppy	*C. tabularis* [272]	
C460	chubularisin Q	R_1=Et; R_2= R_4=Ac; R_3=H; R_5=^{i}Bu	*C. tabularis* [272]	
C461	chubularisin R	R_1=^{i}Pr; R_2=H; R_3=R_4=R_5=Ac	*C. tabularis*[272]	
C462	chukvelutin F	R_1=^{i}Pr; R_2=R_3=Ac; R_4=R_5=H	*C. tabularis* [282]	Anti-inflammatory
C463	chuktabularoid C	R_1=Me; R_2=H; R_3= R_4= R_5=Ac	*C. tabularis*[270]	
C464	chukbularisin A		*C. tabularis*[69]	
C465	chuktabrin C	R_1=OAc; R_2=Ac; R_3=H; R_4=Et	*C. tabularis*[283]	
C466	chuktabrin D	R_1= R_2= R_3=H; R_4=Et	*C. tabularis* [283]	Anti-inflammatory
C467	chuktabrin E	R_1=H; R_2=Ac; R_3=OAc; R_4=Et	*C. tabularis*[283]	Anti-inflammatory
C468	velutinasin F	R_1= R_3=H; R_2=Ac; R_4=Me	*C. tabularis*[281]	NF-κB inhibitory
C469	chuktabularoid B	R_1=OAc; R_2=Ac; R_3=H; R_4=^{i}Pr	*C. tabularis* [270]	
C470	chuktabrin F		*C. tabularis*[283]	Anti-inflammatory
C471	chukvelutin D		*C. tabularis*[282]	
C472	chuktabrin G	R_1= R_2=Ac	*C. tabularis*[283]	Anti-inflammatory
C473	chuktabrin H	R_1=H; R_2=Ac	*C. tabularis*[283]	Anti-inflammatory
C474	chuktabrin K	R_1= R_2=H	*C. tabularis* [279]	

C475	chuktabrin I		*C. tabularis* [283]	Anti-inflammatory
C476	chuktabrin J		*C. tabularis* [283]	Anti-inflammatory
C477	chukorthoester C	R_1=H; R_2=^{i}Bu; R_3=OAc; R_4=^{i}Bu	*C. tabularis*[262]	
C478	chukorthoester D	R_1=H; R_2=^{i}Bu; R_3=OAc; R_4=Ppy	*C. tabularis*[262]	
C479	carapanolide I	R_1-H; R_2=^{i}Bu; R_3=H; R_4=Ac	*Carapa guianensis* [260]	Cytotoxicity
C480	suianofruit F	R_1=R_2=Ac; R_3=OH; R_4=Ppy	*C. guianensis*[53]	
C481	suianofruit G	R_1=R_2=Ac; R_3=OH; R_4=^{i}Bu	*C. guianensis*[53]	
C482	swietenitin Q	R_1=Ac; R_2=Tig; R_3=OH; R_4=H	*Swietenia macrophylla*[301]	
C483	soymidin D	R_1=Ac; R_2=epoxytigloyl; R_3=H; R_4=Ppy	*Soymida febrifuga*[304]	
C484	entanutilin C	R_1=Nic; R_2= R_5=H; R_3=OH; R_4=^{i}Bu	*Entandrophragma utile*[307]	
C485	entanutilin D	R_1=R_2= R_5=H; R_3=OAc, R_4=^{i}Bu	*E. utile* [307]	
C486	entanutilin E	R_1=R_2= R_5=H; R_3=OH; R_4=^{i}Bu; $\Delta^{14,15}$	*E. utile* [307]	
C487	guianofruit H	R_1=Ac; R_2= R_5=H; R_3=OH; R_4=^{i}Bu	*Carapa guianensis*[53]	
C488	guianofruit I	R_1=Ac; R_2=R_3=OAc; R_4=Ppy; R_5=H	*C. guianensis*[53]	
C489	chuktabularoid J	R_1=Ac; R_2= R_5=H; R_3=OH; R_4=Ac	*Chukrasia tabularis* [270]	
C490	carapanosin A	R_1=Ac; R_2=OH; R_3=R_5=H; R_4=Ppy; $\Delta^{14,15}$	*Carapa guianensis*[184]	
C491	carapanosin B	R_1=Ac; R_2=OAc; R_3= R_5=H; R_4=Ppy; $\Delta^{14,15}$	*C. guianensis*[184]	
C492	carapanolide M	R_1=Ac; R_2= R_5=H; R_3=OH; R_4=Ppy	*C. guianensis* [237]	
C493	carapanolide N	R_1=Ac; R_2= R_3=OAc; R_4=^{i}Bu; R_5=H	*C. guianensis* [237]	
C494	carapanolide O	R_1=Ac; R_2=OAc; R_3=OH; R_4=^{i}Bu; R_5=H	*C. guianensis* [237]	
C495	carapanolide P	R_1=Ac; R_2=OAc; R_3=OH; R_4=Ppy; R_5=H	*C. guianensis* [237]	
C496	carapanolide Q	R_1=Ac; R_2=OAc; R_3= R_5=H; R_4=Ppy	*C. guianensis* [237]	
C497	carapanolide X	R_1=Ac; R_2=OH; R_3=OAc; R_4=Ppy; R_5=H	*C. guianensis* [238]	
C498	velutabularin L	R_1=Ac; R_2=OAc; R_3= R_5=H; R_4=^{i}Bu	*Chukrasia tabularis*[276]	
C499	velutabularin M	R_1= R_4=R_5=Ac; R_2=OAc; R_3=H	*C. tabularis* [276]	
C500	chukorthoester A	R_1=R_2=^{i}Bu; R_3=O^{i}Bu; R_4=OAc	*C. tabularis*[262]	Anti- Multidrug resistance
C501	chukorthoester B	R_1=^{i}Bu; R_2=Ppy; R_3=O^{i}Bu; R_4=OAc	*C. tabularis*[262]	Anti- Multidrug resistance
C502	chukorthoester E	R_1=^{i}Bu, R_2=Ac; R_3=OH; R_4=H	*C. tabularis* [262]	
C503	xylomexicanin M	R_1= R_2=Ac; R_3=OH; R_4=OAc	*Xylocarpus granatum* [288]	
C504	carapanolides W	R_1=Ac; R_2=Ppy; R_3=H; R_4=OH	*Carapa guianensis* [238]	
C505	hainangranatumin H		*Xylocarpus granatum*[72]	
C506	carapanolide Y	R_1=Ac; R_2=OH; R_3=O^{i}Bu; R_4=H; R_5=^{i}Bu	*Chukrasia tabularis* [271]	
C507	hainanxylogranin R	R_1=Tig; R_2= R_3=H; R_4=OH; R_5=Ac	*Xylocarpus granatum*[84]	
C508	hainanxylogranin S	R_1=Piv; R_2= R_3=H; R_4=OH; R_5=Ac	*X. granatum*[84]	Human carboxylesterase 2 inhibitory
C509	mahagoloid A	R_1=H; R_2=Ac	*Swietenia mahagoni*[248]	Anti-neuroinflammator

				y
C510	mahagoloid B	R_1=Ac; R_2=H	*S. mahagoni* [248]	
C511	mahagoloid C		*S. mahagoni*[248]	Anti-neuroinflammatory
C512	xylomexicanin L		*Xylocarpus granatum*[288]	
C513	xylorumphiin J		*X. rumphii.* [260]	
C514	kotschyin G	R_1=R_2=Ac; R_3=H; R_4=^{i}Bu	*Pseudrocedrela kotschyi* [191]	
C515	swietenitin V	R_1= R_3=H; R_2=Tig; R_4=Ac	*Swietenia macrophylla* [301]	
C516	andirolide F	R_1=R_2=Ac; R_3=H; R_4=Ppy	*Carapa guianensis* [183]	Cytotoxicity
C517	dormir D	R_1= R_3=H; R_2=Piv; R_4=^{i}Bu	*Neobeguea mahafalensis* [251]	
C518	encandollen B	R_1=H; R_2=Ac; R_3=OAc; R_4=^{i}Bu	*Entandrophragma candollei* [308]	
C519	entanutilin P	R_1= R_3=H; R_2=Nic; R_4=OAc; R_5=^{i}Bu	*E. utile* [266]	
C520	swietenitin R	R_1=H; R_2=2*R*,3*S*-epoxytigloyl; R_3= R_4=H; R_5=Ppy	*Swietenia macrophylla*[301]	
C521	swietenitin S	R_1=Ac; R_2=2*R*,3*S*-epoxytigloyl; R_3= R_4=H; R_5=Ppy	*S. macrophylla*[301]	
C522	swietenitin T	R_1= R_3= R_4=H; R_2=Tig; R_5=Ppy	*S. macrophylla*[301]	
C523	swietenitin U	R_1= R_3= R_4=H; R_2=Tig; R_5=Ac	*S. macrophylla*[299]	
C524	andirolide E	R_1=R_2=Ac; R_3= R_4=H; R_5=Ppy	*Carapa guianensis* [184]	
C525	andirolide V	R_1= R_3= R_4=H; R_2=Ac; R_5=^{i}Bu	*C. guianensis*[85]	
C526	carapanolide L	R_1= R_3= R_4=H; R_2=Ac; R_5=Ppy	*C. guianensis* [185]	
C527	carapanolide V	R_1=R_2=Ac; R_3= R_4=H; R_5=Ppy	*C. guianensis* [238]	
C528	tabulalide H	R_1=R_2= R_5=H; R_3=OH; R_4=OAc	*Chukrasia tabularis*[269]	
C529	tabulalide I	R_1= R_5=H; R_2=Ac; R_3=OH; R_4=OAc	*C. tabularis* [269]	
C530	tabulalide J	R_1=R_2= R_5=H; R_3=R_4=OAc	*C. tabularis* [269]	
C531	tabulalide K	R_1=R_2= R_4= Ac; R_3=H; R_5=OAc; R_6=Me	*C. tabularis*[269]	
C532	tabulalide L	R_1=H; R_2= R_3=R_4=Ac; R_5=OAc; R_6=Me	*C. tabularis* [269]	
C533	tabulalide M	R_1= R_2=H; R_3=R_4=Ac; R_5=OH; R_6=Me	*C. tabularis* [269]	
C534	tabulalide N	R_1=R_3=H; R_2=Ac; R_4=Ppy; R_5=OH; R_6=Me	*C. tabularis*[269]	
C535	chubularisin B	R_1= R_3= R_4=R_5=H; R_2=Ac; R_6=i-Pr	*C. tabularis*[272]	
C536	velutinasin E	R_1= R_3=H; R_2=Ac; R_4=Ppy; R_5=OAc; R_6=Me	*C. tabularis*[281]	NF-κB inhibitory
C537	swietenitin N	R_1=Ppy; R_2=2*R*,3*S*-epoxytigloyl	*Swietenia macrophylla* [301]	
C538	swietenitin O	R_1=Ac; R_2=2*R*,3*S*-epoxytigloyl	*S. macrophylla* [301]	
C539	swietenitin P	R_1=Ppy; R_2=Tig	*S. macrophylla* [301]	
C540	chukorthoester F		*Chukrasia tabularis*[262]	
C541	kotschyin F		*Pseudrocedrela kotschyi* [192]	
C542	encandollen C	R_1=Ppy; R_2= R_3=Ac; R_4=H; R_5=Me	*Entandrophragma candollei* [309]	
C543	encandollen D	R_1= R_3=Ac; R_2=Ppy; R_4=H; R_5=Me	*E. candollei*[309]	
C544	encandollen E	R_1=^{i}Bu; R_2= R_3=Ac; R_4=H; R_5=Me	*E. candollei*[309]	
C545	dodoguin	R_1=^{i}Bu; R_2=Piv; R_3=H; R_4=OAc; R_5=Me	*Neobeguea mahafalensis* [251]	Sleep-inducing

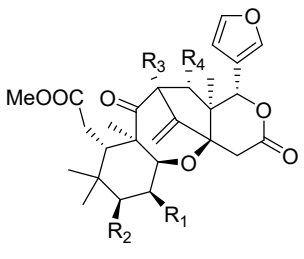
				activity
C546	dormir A	R_1=R_2=^{i}Bu; R_3=H; R_4=OAc; R_5=Me	*N. mahafalensis* [251]	
C547	kotschyin E	R_1=^{i}Bu; R_2=R_3=Ac; R_4=R_5=H	*Pseudrocedrela kotschyi*[191]	
C548	dormir G		*Neobeguea mahafalensis* [251]	
C549	dormir B	R_1=H; R_2=Piv; R_3=Me	*N. mahafalensis*[251]	
C550	dormir C	R_1=H; R_2=^{i}Bu; R_3=Me	*N. mahafalensis* [251]	
C551	kotschyin D	R_1=R_2=Ac; R_3=H	*Pseudrocedrela kotschyi*[191]	Hsp90 inhibitory
C552	dormir F		*Neobeguea mahafalensis*[251]	
C553	dormir E		*N. mahafalensis* [251]	
C554	chuktabularoid G	R_1= R_2=R_4=H; R_3=OAc	*Chukrasia tabularis* [270]	
C555	chuktabularoid H	R_1= R_4=H; R_2=R_3=OAc	*C. tabularis*[270]	
C556	chuktabularoid I	R_1=Ac; R_2=OAc; R_3=R_4=H	*C. tabularis*[270]	
C557	tabulalin C	R_1= R_2= R_3=H; R_4=OAc	*C. tabularis* [277]	Anti-inflammatory
C558	tabulalin N	R_1=Ac; R_2=R_4=H; R_3=OAc	*C. tabularis* [271]	
C559	soymidin A		*Soymida febrifuga* [306]	
C560	velutinasin A	R_1=OAc; R_2=Me	*Chukrasia tabularis*[281]	NF-κB inhibitory
C561	chukrasine F	R_1=H; R_2=Et	*C. tabularis* [284]	
C562	chukvelutilide I	R_1=H; R_2=Ac; R_3=OAc	*C. tabularis*[285]	Insecticidal
C563	chukvelutilide J	R_1=R_2=H; R_3=OAc	*C. tabularis*[285]	
C564	chukvelutilide K	R_1=R_2=Ac; R_3=OAc	*C. tabularis*[285]	
C565	chukvelutilide L	R_1=Ac; R_2=H; R_3=OAc	*C. tabularis*[285]	
C566	chukvelutilide M	R_1=R_3=H; R_2=Ac	*C. tabularis*[285]	
C567	chukvelutilide N	R_1=R_2=R_3=H	*C. tabularis*[285]	
C568	chukvelutilide O	R_1=R_2=Ac; R_3=H	*C. tabularis*[285]	
C569	chukvelutilide P	R_1=Ac; R_2=R_3=H	*C. tabularis*[285]	
C570	chuktabularoid A	R_1= R_3=Ac; R_2=*α*-OAc; R_4=H; R_5=OH	*C. tabularis*[270]	
C571	encandollen A	R_1= R_4= R_5=H; R_2=*α*-OH; R_3=Ac	*Entandrophragma candollei* [308]	Anti-inflammatory
C572	chukvelutilide U	R_1=R_3=Ac; R_2=*α*-OH; R_4=OAc; R_5=H	*Chukrasia tabularis*[285]	
C573	chukvelutilide V	R_1=R_5=H; R_2=*α*-OH; R_3=Ac; R_4=OAc	*C. tabularis*[285]	
C574	chukvelutilide W	R_1=R_3=Ac; R_2=*α*-OH; R_4=H; R_5=OAc	*C. tabularis*[285]	
C575	chukvelutilide X	R_1=R_4=H; R_2=*α*-OH; R_3=Ac; R_5=OAc	*C. tabularis*[285]	
C576	chukvelutilide I	R_1=R_3=Ac; R_2=*β*-OH; R_4=OAc; R_5=H	*C. tabularis* [268]	
C577	chukvelutilide J	R_1= R_3=Ac; R_2=*β*-OH; R_4=R_5=H	*C. tabularis* [268]	
C578	chukvelutilide K	R_1=Ac; R_2=*β*-OAc; R_3=R_4=H; R_5=OAc	*C. tabularis* [268]	
C579	chukvelutilide L	R_1=R_5=H; R_2=*β*-OH; R_3=Ac; R_4=OAc	*C. tabularis* [268]	
C580	chukvelutilide G	R_1=Ac; R_2=R_3=O^{i}Bu; R_4=^{i}Bu; R_5=Me; R_6=H	*C. tabularis*[284]	
C581	chukvelutilide H	R_1=^{i}Bu; R_2= R_3= R_6=OAc; R_4=Ac; R_5=H	*C. tabularis*[275]	
C582	R310B8	R_1= R_2= R_3= R_6=H; R_4=Ac; R_5=Me	*C. tabularis* [286]	
C583	velutinalide A	R_1= R_2= R_3= R_6=H; R_4=^{i}Bu; R_5=Me	*C. tabularis*[286]	
C584	velutinalide B	R_1= R_2= R_3= R_6=H; R_4=Ppy; R_5=Me	*C. tabularis*[286]	

C585	chukvelutilide A1	R_1=H; R_2=Ac; R_3=Ppy; R_4=OAc	*C. tabularis* [271]	
C586	chukvelutilide Y	R_1=Ac; R_2=H; R_3=Ppy; R_4=OAc	*C. tabularis*[239]	
C587	chukvelutilide Q	R_1= R_3=Ac; R_2=H; R_4=OAc	*C. tabularis*[285]	
C588	chukvelutilide R	R_1= R_2=H; R_3=Ac; R_4=OAc	*C. tabularis*[285]	
C589	chukvelutilide S	R_1= R_3=Ac; R_2=R_4=H	*C. tabularis* [285]	
C590	chukvelutilide T	R_1= R_2= R_4=H; R_3=Ac	*C. tabularis*[285]	
C591	velutinasin B	R_1= R_3=Ac; R_2=H; R_4=OAc	*C. tabularis* [281]	NF-κB inhibitory
C592	velutinasin C	R_1= R_2=H; R_3=Ac; R_4=OAc	*C. tabularis* [281]	NF-κB inhibitory
C593	chukvelutilide M	R_1= R_2=H; R_3=^{i}Bu; R_4=OAc	*C. tabularis* [268]	
C594	chubularisin L	R_1=H; R_2= R_3=R_4=^{i}Bu; R_5=Me	*C. tabularis*[272]	
C595	chubularisin M	R_1=Ac; R_2= R_3= R_4=^{i}Bu; R_5=Me	*C. tabularis* [272]	
C596	chubularisin N	R_1=Ac; R_2= R_3= R_4=^{i}Bu; R_5=H	*C. tabularis* [272]	
C597	velutinasin J	R_1= R_3= R_4=Ac; R_2=^{i}Bu; R_5=H	*C. tabularis* [272]	
C598	chukvelutilide Z	R_1= R_2= R_5=H; R_3= R_4=Ac	*C. tabularis* [239]	
C599	velutinasin D	R_1= R_5=H; R_2= R_3=^{i}Bu; R_4=Ac	*C. tabularis* [281]	NF-κB inhibitory
C600	chisomicine A	R_1=Tig; R_2=H	*Chisocheton ceramicus* [256]	Anti-inflammatory
C601	chisomicine F	R_1=Tig; R_2=OH	*Cedrela odorata*[162]	
C602	sundarbanxylogranin A	R_1=^{i}Bu; R_2=H	*Xylocarpus granatum* [241]	
C603	andhraxylocarpin C	R_1=Ac; R_2=H	*X. moluccensis*[58]	
C604	andhraxylocarpin D	R_1=Tig; R_2=H	*X. moluccensis*[58]	
C605	xylomolin J1	R=Ac	*X. moluccensis*[207]	
C606	xylomolin J2	R=Piv	*X. moluccensis*[207]	Cytotoxicity
C607	trangmolin F	R=^{i}Bu	*X. moluccensis*[55]	
C608	secotrichagmalin B	R=Tig	*Trichilia connaroides*[294]	Cytotoxicity
C609	secotrichagmalin C	R=OH	*T. connaroides* [294]	Cytotoxicity
C610	secotrichagmalin A	R=H	*T. connaroides*[230]	Anti-inflammatory
C611	andhraxylocarpin A	R=Tig	*Xylocarpus moluccensis*[58]	
C612	andhraxylocarpin B	R=Ac	*X. moluccensis*[58]	
C613	trichiliton I		*Trichilia connaroides* [295]	Anti-inflammatory
C614	chisomicine D	R=Tig	*Cedrela odorata*[162]	Hsp90 inhibitory
C615	chisomicine E	R=Met	*C. odorata*[162]	
C616	trichisinton A	R_1= R_2=^{i}Bu; R_3=H	*Trichilia sinensis* [292]	
C617	trichisinton B	R_1= R_2=Piv; R_3=H	*T. sinensis* [292]	Acetylcholinesterase inhibitory
C618	trichisinton C	R_1=Tig; R_2=^{i}Bu; R_3=H	*T. sinensis*[292]	Acetylcholinesterase inhibitory
C619	trichisinton D	R_1=Tig; R_2=Piv; R_3=H	*T. sinensis* [292]	Acetylcholinesterase inhibitory
C620	trichinelide A	R_1=Tig; R_2=Ac; R_3=OAc	*T. sinensis*[293]	

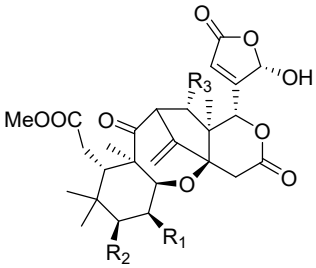
C621	6-O-deacetyltrichinelide A	R_1=Tig; R_2=Ac; R_3=OH	*T. sinensis* [293]	
C622	thaixylomolin S		*Xylocarpus moluccensis*[235]	Human carboxylesterase 2 inhibitory
C623	trichiconlide C	R=Tig	*Trichilia connaroides* [296]	
C624	trichiconlide D	R=Cro	*T. connaroides* [296]	
C625	trichiconlide E	R_1=Tig; R_2=OH	*T. connaroides* [296]	
C626	trichiconlide F	R_1=Tig; R_2=H	*T. connaroides* [296]	
C627	trichiconlide G	R_1=Ac; R_2=H	*T. connaroides* [297]	
C628	malayanine A		*Chisocheton erythrocarpus* [310]	
C629	malayanine B		*C. erythrocarpus*[310]	
C630	xylomolin G1	R_1=Ac; R_2=OH; R_3=OEt	*Xylocarpus moluccensis*[207]	
C631	xylomolin G2	R_1=^{i}Bu; R_2=OH; R_3=OEt	*X. moluccensis*[207]	
C632	xylomolin G3	R_1=Ac; R_2=OH; R_3=H	*X. moluccensis* [207]	
C633	xylomolin G4	R_1=^{i}Bu; R_2=H; R_3=H	*X. moluccensis* [207]	
C634	xylomolin G5	R_1=Piv; R_2= R_3=H	*X. moluccensis* [207]	
C635	trichiconlide C	R_1=Tig; R_2= R_3=H	*Trichilia connaroides*[62]	
C636	krishnolide C	R_1=*S*-Piv; R_2=H; R_3=O^{i}Bu	*Xylocarpus moluccensis* [29]	
C637	krishnolide D	R_1=iBu; R_2=H; R_3=O^{i}Bu	*X. moluccensis*[289]	
C638	thaixylomolin K	R_1=Ac; R_2= R_3=H	*X. moluccensis*[217]	Anti-H1N1
C639	thaixylomolin L	R_1=Ac; R_2=H; R_3=OEt	*X. moluccensis* [217]	
C640	xylomolin H		*X. moluccensis* [207]	
C641	khayseneganin B	R=OH	*Khaya senegalensis* [213]	
C642	khayseneganin C	R=OAc	*K. senegalensis* [213]	
C643	xylomolin I	R_1=Piv; R_2=H; R_3= R_4=OH	*Xylocarpus moluccensis* [207]	
C644	thaixylomolin G	R_1=Ac; R_2=O; R_3=H; R_4=OH	*X. moluccensis* [217]	
C645	thaixylomolin H	R_1=Ac; R_2= R_3=H; R_4=OH	*X. moluccensis* [217]	
C646	khayseneganin A	R_1= R_2=R_4=H; R_3=*α*-OH	*Khaya senegalensis* [213]	
C647	krishnolide A	R=*S*-Piv	*Xylocarpus moluccensis*[291]	Anti-HIV
C648	krishnolide E	R=^{i}Bu	*X. moluccensis*[56]	
C649	krishnolide F	R_1= R_2=O^{i}Bu	*X. moluccensis*[56]	Agonistic effects on human pregnane-Xreceptor
C650	krishnolide G	R_1=Ac; R_2=OPiv	*X. moluccensis*[56]	
C651	krishnolide B	R_1=*S*-Piv; R_2=O^{i}Bu	*X. moluccensis* [291]	
C652	thaixylomolin M	R_1=Ac; R_2=H	*X. moluccensis*[217]	Anti-H1N1
C653	thaixylomolin N	R_1=Ac; R_2=OTig	*X. moluccensis*[217]	
C654	thaixylomolin I	R=H	*X. moluccensis* [217]	Anti-H1N1
C655	thaixylomolin J	R=Et	*X. moluccensis* [217]	
C656	2-methoxy	R_1=R_2=R_4=OH; R_3=OMe	*Swietenia mahagoni* [302]	

	khayseneganin E			
C657	khayseneganin E	R_1= R_2= R_3=R_4=OH	*Khaya senegalensis* [213]	
C658	khayseneganin F	R_1= R_3=OH; R_2=OMe; R_4=H	*K. senegalensis*[213]	
C659	khayseneganin G	R_1= R_4=OH; R_2=OMe; R_3=O	*K. senegalensis*[213]	
C660	khayseneganin H	R_1=OAc; R_2=OMe; R_3=O; R_4=OH	*K. senegalensis*[213]	
C661	khayseneganin I	R_1= R_3= R_4=OH; R_2=OMe	*K. senegalensis* [311]	
C662	1-deacetyl-3-dehydroxy-3-oxokhaysenelide E	R_1=H; R_2=OMe	*Aphanamixis polystachya* [240]	
C663	meliaphanamixin A	R_1=OMe; R_2=OH	*A. polystachya* [240]	
C664	khaysenelide C	R_1=H; R_2= R_4=OH; R_3=O	*Khaya senegalensis* [236]	
C665	khaysenelide D	R_1=Ac; R_2= R_3=O; R_4=OH	*K. senegalensis* [236]	
C666	khaysenelide E	R_1=Ac; R_2=OH; R_3=OMe; R_4=O	*K. senegalensis* [236]	
C667	khaysenelide F	R_1=Ac; R_2= R_3=OH; R_4=O	*K. senegalensis* [236]	
C668	ivorenoid A	R=H	*K. ivorensis* [199]	
C669	ivorenoid B	R=OH	*K. ivorensis*[199]	

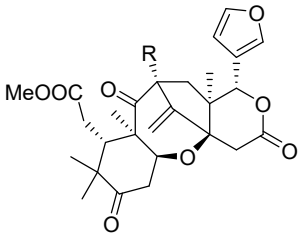
S1.3.3 Other types of rearranged limonoids (C670-C755)



C670-C676



C677-C679



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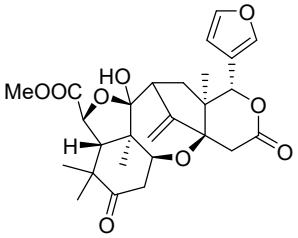
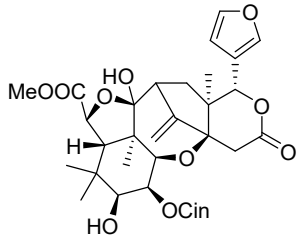
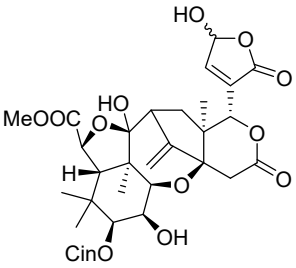


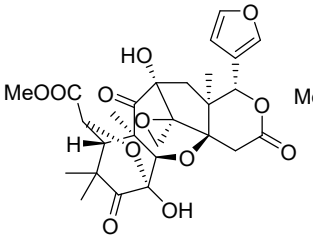
C682



C683



C684



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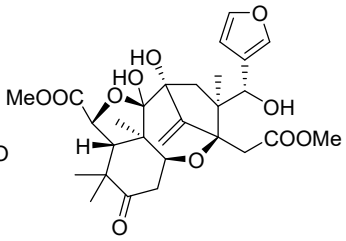

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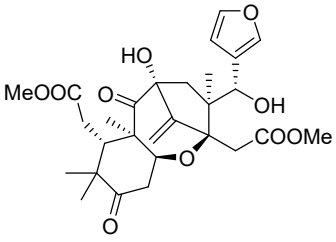

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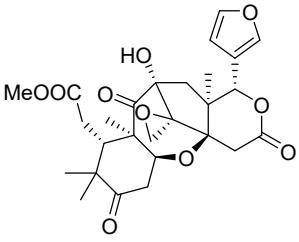

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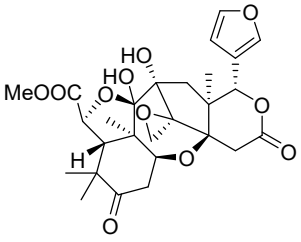

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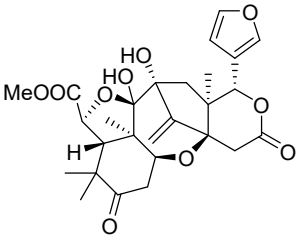

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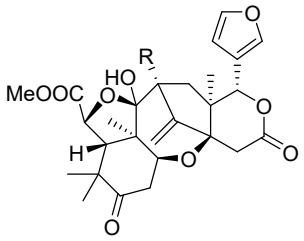
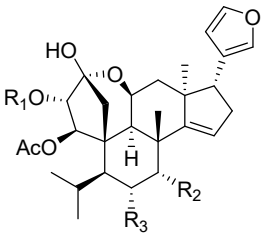


C691-C692



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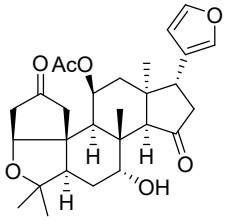

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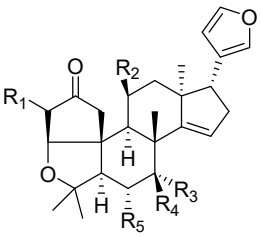
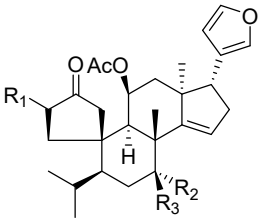
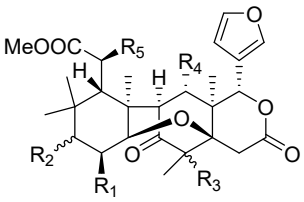


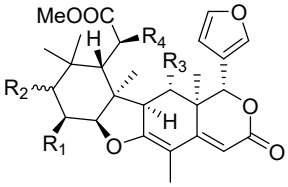
C703-C708



C709-C710



C711-C721



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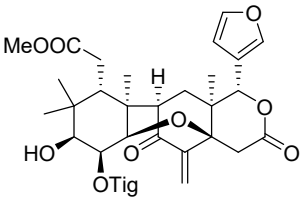
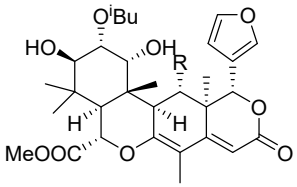


C729



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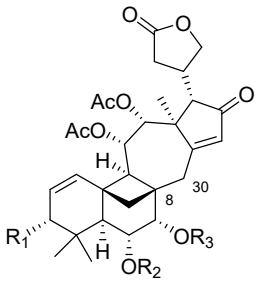

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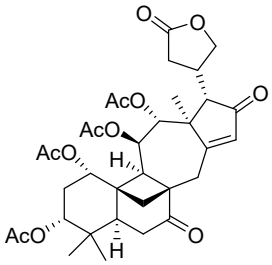
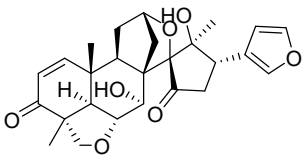
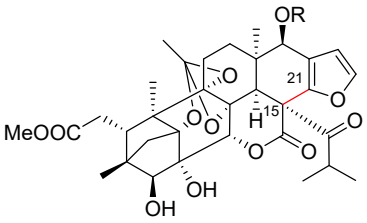


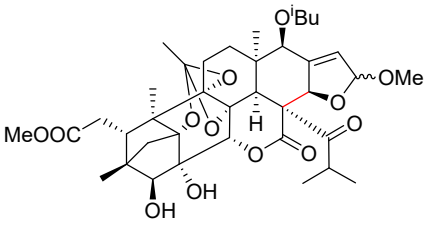
C736



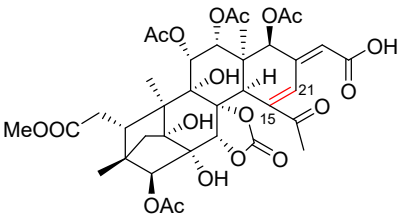
C737



C738-C739



C740



C741

Figure S1.14 Structures of other rearranged limonoids **C670-C741**

Table S1.13 Structures and sources of other rearranged limonoids **C670-C741**

no	Compounds	Substitution groups and others	Sources	Bioactivity
C670	koetjapin D	R_1= R_3=R_4=H; R_2=OAc	*Sandoricum koetjape*[203]	Cytotoxicity
C671	cipatrijugin F	R_1=R_2=OAc; R_3=R_4=H	*Cipadessa baccifera* [313]	
C672	cipatrijugin H	R_1= R_3=H; R_2=OAc; R_4=OH	*C. cinerascens* [314]	
C673	ciparasin A	R_1=R_2=OAc; R_3=H; R_4=OH	*C. cinerascens* [315]	
C674	ciparasin B	R_1=R_4=OH; R_2=OAc; R_3=H	*C. cinerascens* [315]	Anti-HIV
C675	ciparasin C	R_1=OH; R_2= R_4=OAc; R_3= H	*C. cinerascens* [315]	
C676	ciparasin D	R_1=R_3=R_4=H; R_2=OH	*C. cinerascens* [315]	
C677	ciparasin E	R_1= R_3=H; R_2=OAc	*C. cinerascens* [315]	
C678	ciparasin F	R_1= R_2=R_3=OAc	*C. cinerascens* [315]	
C679	ciparasin G	R_1=H; R_2=R_3=OAc	*C. cinerascens* [315]	
C680	cipatrijugin E	R=H	*C. baccifera* [313]	Cytotoxicity
C681	cipatrijugin G	R=OH	*C. cinerascens* [314]	
C682	12-deacetoxyltrijugin A		*Trichilia connaroides* [295]	Anti-inflammatory
C683	cinerascenoid A		*Cipadessa cinerascensa*[207]	Antimicrobial
C684	cinerascenoid B		*C. cinerascensa*[207]	Antimicrobial
C685	trichisin A		*Heynea trijuga*[127]	
C686	trichisin B		*H. trijuga*[127]	
C687	trichisin C		*H. trijuga*[127]	
C688	trichisin D		*H. trijuga*[127]	
C689	trichisin E		*H. trijuga*[127]	
C690	trichisin F		*H. trijuga*[127]	

C691	trichisin G	R=OH	*H. trijuga*[127]	
C692	trichisin H	R=H	*H. trijuga*[127]	Anti-Multidrug resistance
C693	walrobsin A	R_1=Tig; R_2=O; R_3=H	*Walsura robusta*[316]	
C694	walrobsin B	R_1=*S*-Piv; R_2=O; R_3=H	*W. robusta* [316]	
C695	walrobsin J	R_1=Piv; R_2=OH; R_3=H	*W. robusta* [317]	Anti-inflammatory
C696	walrobsin K	R_1=Tig; R_2=OAc; R_3=H	*W. robusta* [317]	Anti-inflammatory
C697	walrobsin L	R_1=Piv; R_2=OAc; R_3=H	*W. robusta* [317]	
C698	walrobsin M	R_1=Tig; R_2=OH; R_3=OAc	*W. robusta* [317]	Anti-inflammatory
C699	walrobsin N	R_1=Piv; R_2=OH; R_3=OAc	*W. robusta* [317]	
C700	walrobsin O	R_1=Tig; R_2=OAc; R_3=OH	*W. robusta* [317]	Anti-inflammatory
C701	walrobsin P	R_1=H; R_2=OAc; R_3=OH	*W. robusta* [317]	Anti-inflammatory
C702	walrobsin C		*W. robusta* [317]	
C703	walrobsin D	R_1= R_5=H; R_2=OAc; R_3=R_4=O	*W. robusta* [317]	
C704	walrobsin E	R_1= R_5=H; R_2=OH; R_3= R_4=O	*W. robusta*[317]	
C705	walrobsin F	R_1= R_4= R_5=H; R_2= R_3=OAc	*W. robusta* [317]	
C706	walrobsin G	R_1= R_4= R_5=H; R_2= R_3=OH;	*W. robusta*[317]	
C707	walrobsin H	R_1=H; R_2=OAc; R_3= R_4=O; R_5=OH	*W. robusta* [317]	
C708	walrobsin I	R_1=OH; R_2=OAc; R_3=OH; R_4= R_5=H	*W. robusta* [317]	
C709	walrobsin Q	R_1= R_2=OH; R_3=H	*W. robusta* [317]	
C710	walrobsin R	R_1=Tig; R_2= R_3=O	*W. robusta*[317]	
C711	ciparasin H	R_1= R_2=*β*-OAc; R_3=*α*-H; R_4=OH; R_5=H	*Cipadessa cinerascens*[314]	
C712	ciparasin I	R_1= R_5=H; R_2=*β*-OAc; R_3=*α*-H; R_4=OH	*C. cinerascens* [314]	
C713	ciparasin J	R_1= R_4=OH; R_2=*β*-OAc; R_3=*α*-H; ; R_5=H	*C. cinerascens* [314]	
C714	ciparasin K	R_1= R_2=*β*-OAc; R_3=*β*-OH; R_4=OH; R_5=H	*C. cinerascens* [314]	
C715	ciparasin L	R_1=R_2=*β*-OAc; R_3=*α*-OH; R_4=OH; R_5=H	*C. cinerascens* [314]	
C716	cibacciferin E	R_1=H; R_2=*β*-OAc; R_3=*α*-H; R_4=OAc; R_5=OH	*C. baccifera*[206]	
C717	2*β*-acetoxycibacciferin E	R_1=OAc; R_2=*β*-OAc; R_3=*α*-H; R_4=OAc; R_5=OH	*C. baccifera*[206]	
C718	cibacciferin F	R_1=O^{i}Bu; R_2=*α*-OH; R_3=*α*-H; R_4=H; R_5=OH	*C. baccifera*[201]	Antimalarial
C719	6-dehydroxycibacciferin F	R_1=O^{i}Bu; R_2=*α*-OH; R_3=*α*-H; R_4= R_5=H	*C. baccifera*[206]	Antimalarial
C720	12-deacetoxycibacciferin E	R_1=H; R_2=*β*-OAc; R_3=*α*-H; R_4=H; R_5=OH	*C. baccifera* [206]	
C721	2*β*-Acetoxy-12-deacetoxycibacciferin E	R_1=OAc; R_2=*β*-OAc; R_3=*α*-H; R_4=H; R_5=OH	*C. baccifera* [206]	
C722	cibacciferin G	R_1=OAc; R_2=*α*-OH; R_3=OH; R_4=H	*C. baccifera* [206]	

C723	cibacciferin H	R_1= R_3=OH; R_2=α-OAc; R_4=H	*C. baccifera* [206]	
C724	12-Dehydroxycibacciferin H	R_1=OH; R_2=α-OAc; R_3=R_4=H	*C. baccifera*[206]	
C725	cibacciferin I	R_1=H; R_2=β-OAc; R_3=OAc; R_4=OH	*C. baccifera*[206]	
C726	ciparasin M	R_1= R_3=OH; R_2=β-OAc; R_4=H	*C. cinerascens*[314]	
C727	ciparasin N	R_1= R_3=OH; R_2=β-OH; R_4=H	*C. cinerascens*[314]	
C728	ciparasin O	R_1= OH; R_2=β-OH; R_3=H; R_4=H	*C. cinerascens*[314]	
C729	cipaferen O		*C. baccifera*[202]	
C730	cipaferoid B	R=H	*C. baccifera*[91]	
C731	cipaferoid C	R=OH	*C. baccifera*[91]	Antimalarial
C732	entanutilin A	R_1=OH; R_2=Ac; R_3=^{i}Bu	*Entandrophragma utile* [261]	
C733	entanutilin L	R_1=O; R_2=Ac; R_3=^{i}Bu	*E. utile* [307]	
C734	entanutilin M	R_1=O; R_2= R_3=^{i}Bu	*E. utile* [307]	
C735	entanutilin N	R_1=OH; R_2=Ac; R_3=^{i}Val	*E. utile* [307]	
C736	delevoyin D		*Cedrela odorata* [212]	
C737	spirodione		*Azadirachta indica* [320]	Antibacterial
C738	velutinalide C	R=Ppy	*Chukrasia tabularis* var. *velutina*[321]	
C739	chukfuransin C	R=^{i}Bu	*C. tabularis*;[54] *C. tabularis* var. *velutina*[321]	
C740	chukfuransin D		*C. tabularis*;[54] *C. tabularis* var. *velutina*[321]	
C741	chuktabrin L		*C. tabularis*[83]	

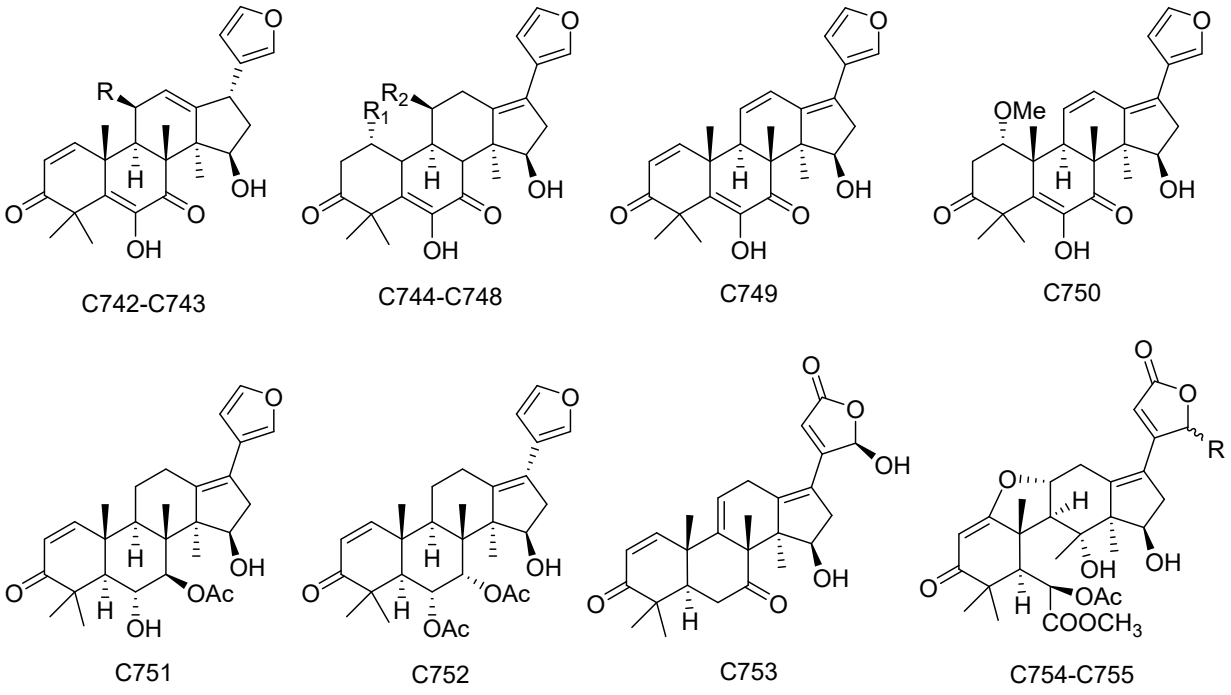


Figure S1.15 Structures of rearranged limonoids with methyl migration **C742-C755.**

Table S1.14 Structures and sources of rearranged limonoids with methyl migration **C742-C755.**

no	Compounds	Substitution groups and others	Sources	Bioactivity
C742	dysoxylumosin A	R=H	*Dysoxylum mollissimum*[105]	
C743	walsuronoid F	R=OH	*Walsura robusta*[99]	Anti-Multidrug resistance
C744	dysoxylumosin B	R_1=OMe; R_2=OH	*Dysoxylum mollissimum*[105]	
C745	dysoxylumosin E	R_1=OMe; R_2=OAc	*D. mollissimum*[105]	
C746	dysoxylumosin F	R_1=H; R_2=OAc	*D. mollissimum*[105]	11β-HSD1 inhibitory
C747	walsuronoid G	R_1=OEt; R_2=OH	*Walsura robusta*[99]	
C748	walsuronoid H	R_1=OMe; R_2=OH	*W. robusta*[99]	
C749	dysoxylumosin C		*Dysoxylum mollissimum*[105]	
C750	dysoxylumosin D		*D. mollissimum*[105]	
C751	walsuronoid I		*Walsura robusta*[99]	
C752	toonaciliatone C		*Toona ciliate*[112]	
C753	toonaone A		*T. ciliata*[106]	
C754	ciliatone A	R=OH	*T. ciliata* [163]	
C755	ciliatone B	R=H	*T. ciliata*[163]	

S1.4 Nor-limonoids (D1-D59)

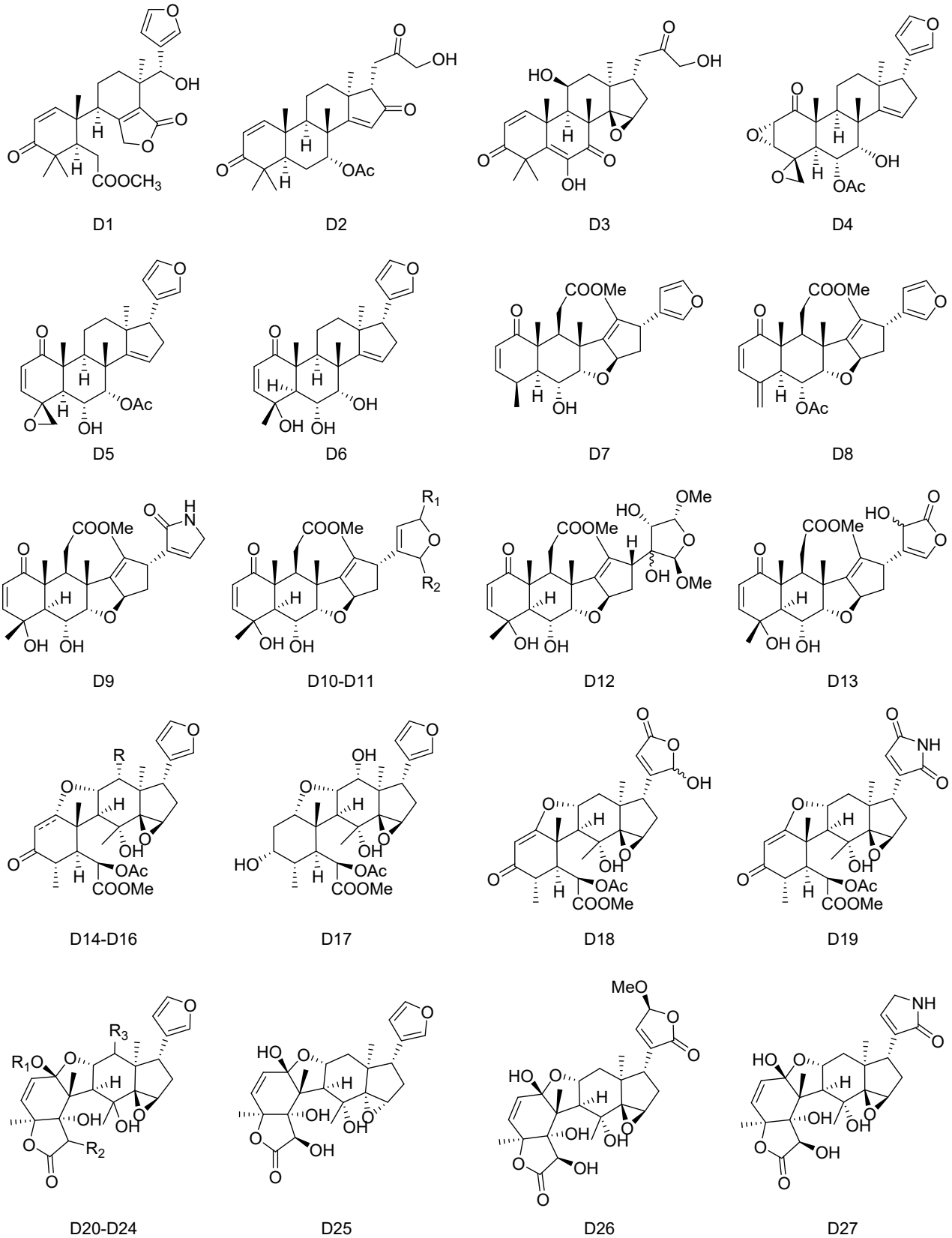


Figure S1.16 Continued

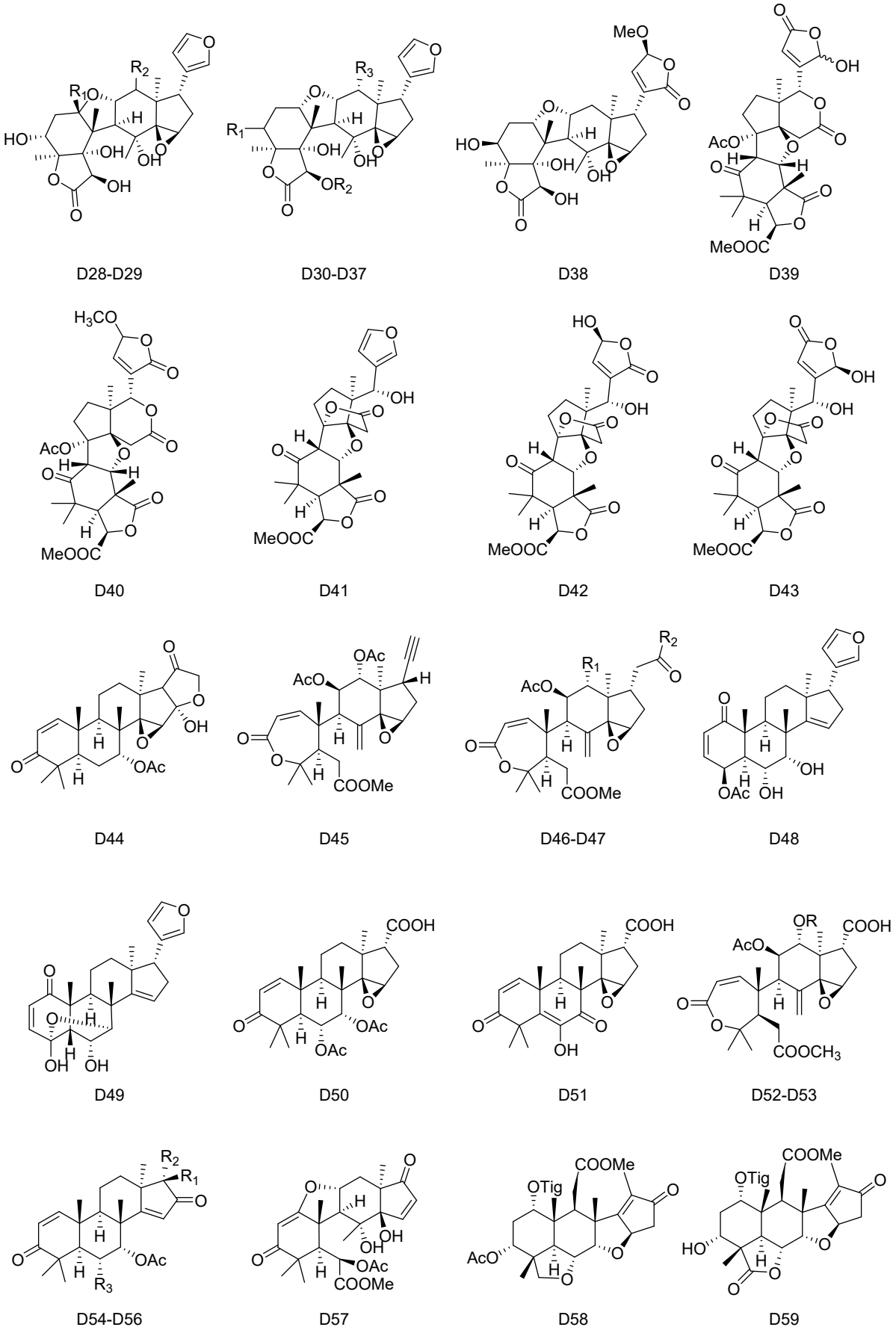


Figure S1.16 Structures of norlimonoids **D1**-**D59.**

Table S1.15 Structures and sources of norlimonoids **D1-D59.**

no	Compounds	Substitution groups and others	Sources	Bioactivity
D1	carapanin A		*Carapa guianensis*[263]	
D2	azadiraindin B		*Azadirachta indica* [327]	
D3	walsunoid A		*Walsura robusta*[111]	
D4	ceramicine E		*Chisocheton ceramicus*[147]	
D5	ceramicine P		*C. ceramicus*[66]	
D6	ceramicine L		*C. ceramicus* [323]	Cytotoxicity
D7	4-dehydroxynimbandiol		*Azadirachta indica*[141]	Cytotoxicity
D8	morenolide		*A. indica*[324]	Anti-inflammatory
D9	nimbandiolactam-21		*A. indica* [325]	
D10	nimbandiolactone-21	R_1=OH; R_2=O	*A. indica* [326]	
D11	17-desfuran-17-(21-hydroxy-20(22)-ene21,23-γ-lactone)nimbandiol	R_1=O; R_2=OH	*A. indica*[95]	
D12	nimbandioloxyfuran		*A. indica*[326]	α-Glucosidase inhibitory
D13	17-desfuran-17-(22-hydroxybut-20(21)-ene-21,23-γ-lactone)nimbandiol		*A. indica*[96]	
D14	toonayunnanae I	R=OH	*Toona ciliata*[81]	
D15	ciliatasecone N	R=H; $\Delta^{1,2}$	*T. ciliate* var. *yunnanensis*[100]	
D16	toonaciliatone A	R=OH; $\Delta^{1,2}$	*T. ciliate* var. *yunnanensis*[327]	
D17	toonaciliatone B		*T. ciliate* var. *yunnanensis*[327]	
D18	ciliatone F		*T. ciliate*[163]	
D19	ciliatone L		*T. ciliate*[163]	
D20	toonaciliatone C	R_1=H; R_2=*β*-OH; R_3=O	*T. ciliate* var. *yunnanensis* [327]	Cytotoxicity
D21	toonanoronoid E	R_1=H; R_2=*α*-OH; R_3=H	*T. ciliate*[103]	
D22	ciliatonoid C	R_1=H; R_2=*β*-OH; R_3=H	*T. ciliate*[166]	
D23	ciliatasecone R	R_1=Me; R_2=*β*-OH; R_3=*α*-OH	*T. ciliata* var. *yunnanensis*[100]	
D24	toonamicronoid A	R_1=Me; R_2=*β*-OH; R_3=O	*T. microcarpa*[167]	Cytotoxicity
D25	toonamicronoid B		*T. microcarpa* [167]	
D26	toonanoronoid F		*T. ciliate*[103]	
D27	toonanoronoid H		*T. ciliate*[103]	
D28	toonasinenine D	R_1=OH; R_2=H	*T. sinensis* [156]	Anti-inflammatory; Antioxidation; Cytotoxicity
D29	toonaciliatone D	R_1=H; R_2=O	*T. ciliate* var. *yunnanensis*[326]	
D30	toonanoronoid A	R_1=*β*-OH; R_2=H; R_3=H	*T. ciliate*[103]	
D31	toonanoronoid B	R_1=*β*-OH; R_2=H; R_3=OH	*T. ciliate*[103]	

D32	toonanoronoid C	R_1=*α*-OAc; R_2=H; R_3=H	*T. ciliate*[103]	Cytotoxicity
D33	toonanoronoid D	R_1=*α*-OAc; R_2=Ac; R_3=H	*T. ciliate*[103]	Cytotoxicity
D34	toonacilianin K	R1=*β*-OH; R_2=H; R_3=OH	*T. ciliata* var. *henryi* [166]	
D35	toonacilianin L	R1=*α*-OH; R_2=H; R_3=OH	*T. ciliata* var. *henryi* [166]	
D36	toonaciliatin N	R_1=O; R_2=H; R_3=OAc	*T. ciliata* var. *yunnanensis* [328]	
D37	toonaciliatin O	R_1=*α*-OH; R_2=H; R_3=OAc	*T. ciliata* var. *yunnanensis*[328]	
D38	toonanoronoid G		*T. ciliate*[103]	
D39	trijugin I		*Trichilia connaroides* [233]	
D40	trijugin J		*T. connaroides* [233]	
D41	2-hydroxyltrijugin F		*T. connaroides*[297]	
D42	21-oxo-23-hydroxyltrijugin F		*T. connaroides* [297]	
D43	23-oxo-21-hydroxyltrijugin F		*T. connaroides* [297]	
D44	azadiraindin A		*Azadirachta indica* [329]	
D45	munronin O		*Munronia henryi*[193]	Anti- TMV
D46	munropin D	R_1=OAc; R_2=H	*M. pinnata* [182]	
D47	munropin E	R_1=OH; R_2=OAc	*M. pinnata* [182]	
D48	ceramicine K		*Chisocheton ceramicus*[323]	Cytotoxicity
D49	ceramicine M		*C. ceramicus* [66]	LDA inhibitory
D50	toonapubesic acid A		*Toona ciliata var. pubescens* [330]	
D51	toonapubesic acid B		*T. ciliata var. pubescens* [330]	
D52	munronin G	R=Ac	*Munronia henryi*[194]	
D53	mulavanin C	R=Tig	*M. delavayi* [159]	
D54	azadiraindin C	R_1=H; R_2=OH; R_3=H	*Azadirachta indica*[329]	
D55	azadiraindin D	R_1=OH; R_2=H; R_3=H	*A. indica*[329]	
D56	azadiraindin R	R_1=R_2=H; R_3=OAc	*Carapa guianensis*[85]	
D57	ciliatone G		*Toona ciliate*[163]	
D58	17-defurano-17-oxosalanin		*Azadirachta indica* [331]	
D59	3-deacetyl-17-defurano-17,28-dioxosalannin		*Melia azedarach*[175]	EBV-EA inhibitory

S2 Biological activities of meliaceous limonoids

Table 2.1 Reports on the anti-tumort activity of meliaceous limonoids in the past decade.

Plant origin	Compound	Tumor type	Effects
Azadirachta indica	nimbolide	Breast cancer	reversing multidrug resistance and inhibiting NF-κB activity[346]
			down-regulating Urokinase type plasminogen activator (uPA) chemokine gene expression[339]
			destroying the substrate recognition of E3 ubiquitin ligase RNF114 and inhibiting the degradation of ubiquitination and p21 and other tumor suppressor factors[343]
			down-regulates cell survival and proliferation[333]
		Liver cancer	□abrogating canonical NF-κB and Wnt signaling to induce caspase-dependent apoptosis[338]
			restoring hepatic tight junction protein expression and reduced inflammation[340]
		Oral cancer	down-regulating the proteins involved in the cell cycle process, and through endogenous and exogenous Pathway transduce cell apoptosis[345]
			targeting miR-21 and HIF-1α to up-regulate RECK, leading to a decrease in matrix metalloproteinase activity, and by reducing microvessel density, inhibiting tumor angiogenesis[335]
		Cervical cancer	Stop the cell cycle and target multiple molecules involved in mitochondrial apoptosis[341]
		Kidney cancer	Induces cycle arrest, DNA damage and apoptosis in human renal cancer cells;down-regulates cell survival and proliferation[333, 339]
		Lymphoma	targeting bcl−2, nimbolide induces Waldenströms macroglobulinemia cell apoptosis in vivo and in vitro;down-regulates cell survival and proliferation[333, 337]
		Colon adenocarcinoma	Downregulates the MMP-2/9 by inhibiting ERK1/2 and reducing the DNA binding activity of NF-kB Expression, thereby delaying the migration, invasion and angiogenesis of HCT-116[344]
		Pancreatic cancer	reducing the CD44-positive cell population of pancreatic cancer cells and inducing mitochondrial apoptosis[336]
		Lung cancer	Modified I-κBα kinase cysteine 179 down-regulates cell survival and proliferation proteins regulated by NF-κB and sensitizes tumor cells to chemotherapeutics[333]
		Bone marrow cancer	
		Human squamous cell carcinoma	
		Prostate cancer	Express PI3K-Akt-mTOR pathway, inhibit the survival and proliferation of PC-3 cells[342]

		Leukemia	down-regulates cell survival and proliferation;Sensitize tumor cells to apoptosis induced by anticancer drugs and improve the effect of anti-tumor treatment[333, 346]
	azadirachtin	Lymphoma	Inhibit cell proliferation and induce cell apoptosis[335]
		Oral cancer	through a stabilizing activity of microtubules or by inhibition of Aurora A, play a role in inhibiting proliferation[349]
		Cervical cancer	Stop the cell cycle and target multiple molecules involved in mitochondrial apoptosis[341]
		Breast cancer	Directly inhibit IKK to activate NF-κB and mediate cell death[348]
		Glioma	
		Lung cancer	
		Colon cancer	
		Liver cancer	
	7-desacetoxy-6,7-dehydrogedunin	Glioma	anti-proliferation[349]
	7-deacetyl-7-benzoylgeduin	leukemia	Induces apoptosis through mitochondria and death receptor-mediated pathways[367]
	gedunin	Pancreatic cancer	Inhibition of sonic hedgehog signal transduction induces its anti-metastasis effect, and induces pancreatic cancer cell death through endogenous and exogenous mediated apoptosis[350]
		Oral cancer	Gedunin abrogates aldose reductase, PI3K/Akt/mToR, and NF-κB signaling pathways to inhibit angiogenesis in a hamster model of oral carcinogenesis[351]
		Melanoma	inhibiting the content of tyrosine receptor active protein and the expression of melanogenesis-related genes[352]
	epoxyazadiradione	Cervical cancer	Induce cell mitochondrial apoptosis and inhibit NFκB nuclear translocation[353]
		breast cancer	suppresses breast tumor growth through mitochondria depolarization and caspase-dependent apoptosis by targeting PI3K/Akt pathway[355]
		head and neck squamous cell carcinoma	Increase the production of ROS, increase the expression of NOX-5, reduce the activity of NF-κB, and regulate the expression of LncRNAs, thereby exhibiting anti-cancer, anti-proliferation, pro-apoptotic and anti-migration activities[354]
	azadirone	Colon adenocarcinoma	enhances the sensitivity of tumor cells to Tumor Necrosis Factor-related Apoptosis-inducing Ligand (TRAIL)[356]
		multiple myeloma	
		embryonic kidney cancer	
		pancreatic cancer	
		breast cancer	
		lung adenocarcinoma	
		chronic myeloid	

		leukemia	
Melia azedarach	12-*O*-acetylazedarachin B	leukemia	Induces apoptosis through mitochondria and death receptor-mediated pathways[367]
		Stomach cancer	Induce apoptosis and necrosis[367]
	12-hydroxyamoorasti	leukemia	Specifically for ERK1/2, treat cancers caused by disorders of the MAPK/ERK pathway[354]
	1-deacetylsendani		
	29-iso-butylsendanin		
	1-cinnamoyltrichilinin	human epidermoid carcinoma	Induce cell apoptosis through the p38MAPK pathway[358]
		leukemia	
	toosendanin	Osteosarcoma	Inducing cell growth arrest/cell arrest[359]
	meliartenin and 12-hydroxyamoorastatin	Colon cancer	P53-dependent mechanism induces continuous S phase arrest, triggers apoptotic cell death, and reduces the ability of cell clone formation[365]
Melia toosendan	toosendanin	leukemia	Promote apoptosis by inhibiting the CDC42/MEKK1/JNK pathway in cells[368]
Toona sinensis	tooniliatone A	Breast cancer	Inhibit the effect of Bcl-xL by activating the SAPK/JNK pathway, thereby reversing tumor multidrug resistance[360]
Khaya anthotheca	anthothecol	Pancreatic cancer	Inhibit proliferation and colony formation, and induce apoptosis[361]
Chisocheton ceramicus	ceramicine B	Melanoma	Down-regulate tyrosinase protein expression[362]
Trichilia rubescens	TS3	Liver cancer	induce apoptosis in hepatoma cells and interfered with NF-κB activation[363]
	rubescin E		
Walsura robusta	walsuronoid B	Liver cancer	Induced liver cancer mitochondrial and lysosome dysfunction through ROS/p53 signaling pathway leading to cell apoptosis[364]
Swietenia macrophylla	6-*O*-acetylswietephragmin E	Melanoma; Colorectal carcinoma	Inhibit proliferation, induce cell G2/M phase block and DNA damage, promote apoptosis through the mitochondrial pathway of bcl-2 decrease and CASP-3 increase[366]
Trichilia catigua	cedrelone acetate	Breast cancer	Induce cell cycle arrest, apoptosis, inhibit cell metastasis, and reduce NFκB level and MMP9 activity[369]

Table 2.2 Reports on the anti-inflammatory activity of Meliaceous Limonoidss in the past decade.

Plant origin	Compound	Modeling method	Effects
Azadirachta indica	nimbolide	In vitro: Stimulate intestinal epithelial cells and macrophages with TNF-α or LPS	Inhibiting the nuclear factor-κB pathway of intestinal epithelial cells and macrophages to reduce experimental

		in vivo: acute colitis model induced by dextran sodium sulfate and the IL-10$^{-/-}$ mice model of chronic colitis	colitis in mice[371]
		in vivo: Freund's adjuvant induced arthritis in rats	reducing the expression of pro-inflammatory cytokines in arthritic rats[371]
		In vitro: LPS stimulated RAW 264.7, THP-1, MLE-12, A549 and BEAS-2B cells	inhibiting TNF- α Mediated NF- κ B and HDAC-3 nuclear translocation[372]
		in vivo: Acute respiratory distress syndrome induced by LPS oropharyngeal drip	
		in vivo: cerulein induced chronic pancreatitis (CP) model	inhibiting β-catenin/Smadsirtuin dependent manner, it plays an anti-inflammatory and anti fibrosis role[373]
	gedunin	In vitro: using recombinant mouse TNF-α to induce mouse vascular endothelial cell line tEnd.1	inhibit calcium influx, cell adhesion, Chemotaxis and liposome formation[374]
		In vivo: Zymosan-induced acute joint inflammation in C57BL/6 mice	Improve knee joint swelling, neutrophil influx, hyperalgesia and the production of inflammatory mediators in the body[374]
		In vitro: LPS-induced immortalized mouse macrophages	As a competitive inhibitor of LPS, it blocks the formation of Toll-like receptor 4/MD-2/LPS complex[375]
		In vitro: LPS or LPS+ATP stimulates immortalized macrophages	Impairs the activation of inflammasomes, the production of inflammatory mediators and the mobilization of leukocytes, as well as the regulation of TLR-mediated responses by triggering the production of anti-inflammatory factors[376]
		In vivo: Lipopolysaccharide-induced pleurisy	
	azadirachtin	In vivo: Carrageenan-induced paw edema and fibrovascular tissue growth induced by subcutaneous cotton pellet implantation models, and Zymosan-induced writhing and hot plate tests	Significantly reduce the acute foot swelling caused by carrageenan in mice, inhibit the proliferation period of inflammatory reaction, and it is manifested by the decrease of the growth of fibrous blood vessel tissue[379]
	17-hydroxy-15-methoxyribocinol	In vitro: LPS-stimulated mouse macrophages RAW-264.7 cells	Reduce the expression level of NO, iNOS/COX-2 protein[378]
	7-deacetylgedunin		

Xylocarpus granatum and *Xylocarpus moluccensis*	7-deacetylgedunin	In vitro: LPS and INF-γ stimulated mouse macrophages RAW-264.7 cells	inhibits the expression levels of iNOS/COX-2 mRNA and protein by inhibiting the activation of NF-κB and MAPK signaling pathways, which effectively inhibited NO release in RAW264.7cells[377]
Toona sinensis	toonaciliatin K	In vitro: LPS-stimulated mouse macrophages RAW-264.7 cells	Regulates MAPK and NF-kB signaling pathways[380]
		In vivo: Arthritis induced by carrageenan and adjuvant in rats	Inhibit foot swelling, histological changes[380]
	7-α-Obacunyl acetate	In vitro: LPS-stimulated mouse macrophages RAW-264.7 cells	Regulate JAK-STAT/NFκB signaling pathway[381]
		In vivo: Cecal ligation and perforation induced sepsis in mice (CLP)	Improve the survival rate of sepsis mice, reduce the level of serum inflammatory factors, and reverse the increase of main indicators such as kidney, liver, and heart functions in mice[381]
Khaya senegalensi	khayandirobilide A	In vitro: LPS-induced RAW264.7 cells	Regulate NF-κB, p38 MAPK/Nrf2/HO-1 , and AP-1 signaling pathways[382]
Trichilia welwitschii	trichilia lactone D5	In vitro: LPS-induced RAW264.7 cells	Inhibits NO production by macrophages and has anti-acetylcholinesterase (AChE) activity[383]
	rohituka 3		
	dregeanin DM4		
Munronia sinica	munronoid I	In vitro: LPS-induced mouse peritoneal macrophages	Inhibits the activation of NF-κB signaling pathway, the expression of iNOS, COX2 and the production of pro-inflammatory cytokines. Promotes K48-linked ubiquitination and proteasomal degradation of TAK1[384]
		In vivo: intratracheal injection of LPS in mice	Inhibits LPS-induced pathological damage, inflammatory cell infiltration, and production of IL-1β and IL-6[384]
Munronia unifoliolata		In vitro: LPS/ATP-induced THP-1 cells	plays anti-inflammatory effects via exerting antioxidant effects, improving mitochondrial damage and inhibiting the release of pro-inflammatory cytokine IL-6[128]

Table.2.3 Reports on the anti-insect activity of meliaceous limonoidss in the past decade.

Phytochemicals	Plant origin	Pest species	Effects

azadirachtin	*Azadirachta indica*	*Spodoptera frugiperda*	mediating apoptosis through mitochondria[428]
		Spodoptera litura	inhibiting larval feeding[430]
		Sitophilus zeamais	inhibiting offspring reproduction[433]
		Callosobruchus maculatus	
		Sarcophaga(Liopygia)*argyrostoma*	Immunosuppressive effect of nongenotoxic stress[432]
		leaf-cutting ants	Increase the mortality of leaf cutter ants without affecting the immune response[434]
		Bactrocera dorsalis larvae	induces the release of cathepsin from lysosomes, reduces the digestion and absorption of nutrients in the midgut, and inhibits the growth and development of larvae[431]
gedunin and its derivatives	*Cabralea canjerana* and *Carapa guianensis*	*Spodoptera frugiperda*	prolong the larval stage[435]
cedrelone	*Toona ciliata*		causes lethal and sublethal effects , especially by ingestion, in addition to secondary phagodeterrence[436]
3-O-benzoyl-3-detigloylisoswietenine,6-O-benzoylswietenolide, 6-*O*-benzoylswietenine,and 3,6-*O*,*O*-dipropionylswietenolide	*Swietenia macrophylla* and *Swietenia aubrevilleana*	*Artemia salina*	Inhibit proliferation[437]