**SUPPLEMENTARY MATERIAL for**

# Halimane diterpenoids: sources, structures, nomenclature and biological activities

*Alejandro M. Roncero, Ignacio E. Tobal, Rosalina F. Moro, David Díez, Isidro S. Marcos*[§, *]

**CONTENT:**

**Structures of halimane diterpenoids (Figures S1-S14)**

**Tables including natural source, activities and references. (Tables S1-S6)**

* *Departamento de Química Orgánica, Facultad de Ciencias Químicas, Universidad de Salamanca. Plaza de los Caidos 1-5, 37008 Salamanca. Spain. e-mail address: ismarcos@usal.es*

**Table S1. Halim-1(10)-enes**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| ***Ent*-halim-1(10)-enes** | | * | | |
| Chettaphanin I, **38** | *Adenochlaena siamensis* (Syn. of *Cladogynos orientalis*)<br>*Croton crassifolius* | R<br>R | | 1-6 |
| *Ent*-halimic acid methyl ester, **39** | *Halimium viscosum* (Villarino de los Aires, V.A.) | AP | | 7, 8 |
| **40** | *H. viscosum* (V.A.) | AP | | 7, 8 |
| **41** | *H. viscosum* (V.A.) | AP | | 7 |
| **42** | *H. viscosum* (V.A.) | AP | | 7 |
| **43** | *H. viscosum* (V.A.) | AP | | 7 |
| **44** | *H. viscosum* (V.A.) | AP | | 7 |
| **45** | *H. viscosum* (V.A.)<br>*Hymenaea courbaril* | AP<br>SPR | | 8, 9 |
| **46** | *H. viscosum* (V.A.) | AP | | 7, 8 |
| **47** | *H. viscosum* (V.A.) | AP | | 8 |
| **48** | *H. viscosum* (V.A.) | AP | | 8 |
| **49** | *H. viscosum* (V.A.) | AP | | 10 |
| **50** | *H. viscosum* (V.A.) | AP | | 11 |
| **51** | *H. viscosum* (V.A.) | AP | | 11 |
| **52** | *H. viscosum* (V.A.) | AP | | 7 |
| **53** | *H. viscosum* (V.A.) | AP | | 7 |
| **54** | *H. viscosum* (V.A.) | AP | | 11, 12 |
| **55** | *H. viscosum* (V.A.) | AP | | 11, 12 |
| **56** | *H. viscosum* (V.A.) | AP | | 11 |
| **57** | *H. viscosum* (V.A.) | AP | | 11 |
| **58** | *H. viscosum* (V.A.) | AP | | 11 |
| 13*R*-Hydroxy-*ent*-halima-1(10),14-dien-18-oic acid, **59** | *Hymenaea courbaril* | L, S, T | Antitumour | 13 |
| 2*S*,13*R*-Dihydroxy-*ent*-halima-1(10),14-dien-18-oic acid, **60** | *H. courbaril* | L, S, T | | 13 |
| 2-Oxo-13*R*-hydroxy-*ent*-halima-1(10),14-dien-18-oic acid, **61** | *H. courbaril* | L, S, T | | 13 |
| **62** | *Halimium viscosum* (Celorico da Beira, C.B.) | AP | | 14 |
| Crassifoliusin A, **63** | *Croton crassifolius* | R | Not cytotoxic | 5 |
| Crassin D, **64** | *C. crassifolius* | R | Not cytotoxic | 15 |
| **65** | *Cladogynos orientalis* | R | Not cytotoxic, not antitubercular | 6 |
| **66** | *Hymenaea courbaril* | SPR | | 9 |
| **67** | *Halimium viscosum* (La Fregeneda, L.F.) | AP | | 16 |
| **68** | *H. viscosum* (V.A. and L.F.) | AP | | 7, 16 |
| Methyl 15-methoxy-*ent*-halim-1(10)-en-18-oate, **69** | *H. viscosum* (L.F. and C.B.) | AP | | 16, 17 |
| **70** | *H. viscosum* (L.F. and C.B.) | AP | | 17, 18 |

| | | | | |
|---|---|---|---|---|
| **71** | *H. viscosum* (L.F. and C.B.) | AP | | 17 |
| **72** | *Hymenaea courbaril* | SPR | | 9 |
| **73** | *H. viscosum* (C.B.) | AP | | 17 |
| **74** | *H. viscosum* (C.B.) | AP | | 17 |
| Crassifolin C, **75** | *Croton crassifolius* | R | Antiviral | 3 |
| **76** | *H. viscosum* (L.F. and C.B.) | AP | | 16, 19 |
| 18-Hydroxy-*ent*-halima-1(10),13E-dien-15-oic acid, **77** | *Hymenaea stigonocarpa* | Fl, L | | 20 |
| **78** | *Eupatorium turbinatum* (Syn. of *Chromolaena bigelovii*) | AP | | 21 |
| *Ent*-halima-1(10),14-dien-13ξ-ol, **79** | *Jungermannia infusca* | WP | | 22 |
| **80** | *Polyalthia longifolia* | SB | | 23 |
| Spurillin B, **81** | *Spurilla sp.* | | | 24 |
| **82** | *Baccharis polifolia* | AP | | 25 |
| **83** | *B. polifolia* | AP | | 25 |
| 13*R*-*Ent*-halim-1(10)-en-15,16-diol, **84** | *Vellozia kolbekii* | L | Antitumour, antimicrobial | 26 |
| **85** | *Polyalthia longifolia* | SB | Cytotoxic, antiviral | 23, 27 |
| (+)-8'-Oxo-agelasine C, **86** | *Agelas mauritiana* | | | 28, 29 |
| **Halim-1(10)-enes** | | | | |
| Halima-1(10),14-dien-13ξ-ol, **87** | *Plagiochila barteri* | | | 30 |
| Charruoic acid, **88** | *Ophryosporus charua* | AP | | 31 |
| (-)-Agelasine C, **89** | *Agelas sp.*<br>*A. citrina* | | Inhibitory efects on Na,K-ATPase, antifungal | 32-34 |
| **8-Epi-halim-1(10)-enes** | | | | |
| **90** | *Relhania acerosa* | | | 35 |
| Vitetrifolin G, **91** | *Vitex trifolia*<br>*V. rotundifolia* | Fr, L<br>Fr | | 36-38 |
| Viterofolin F (Vitextrifloxide F), **92** | *V. trifolia*<br>*V. rotundifolia* (Syn. of *V. trifolia* subesp *litoralis*) | L<br>Fr | Topoisomerase I inhibition | 37, 39 |
| Viterofolin G, **93** | *V. rotundifolia* | Fr | | 39 |
| Vitextrifloxide G, **94** | *V. trifolia* | L | Cytotoxic<br>Topoisomerase I inhibition | 37 |
| **8-Epi-*ent*-halim-1(10)-enes** | | | | |
| Austrodorin, **95** | *Austrodoris kerguelenensis* (Syn. of *Doris kerguelenensis*) | SM | Self-defense | 40 |
| Diacetyl austrodorin, **96** | *A. kerguelenensis* | SM | Self-defense | 40 |
| Plasmadorin R, **97** | *A. kerguelenensis* | SM | | 41, 42 |
| Plasmadorin S, **98** | *A. kerguelenensis* | SM | | 41, 42 |
| Echinohalimane A, **99** | *Echinomuricea sp.* | | Cytotoxic, antitumour<br>Neutrophil Elastase inhibition | 43, 44 |
| Epi-agelasine C, **100** | *Agelas sp.* | | Antifouling | 32, 45 |
| Isoagelasine C, **101** | *A. nakamurai* | | Antifungal, antibacterial | 46 |

***Organism extraction part:** AP: Aerial Part; Fl: Flowers; Fr: Fruits; L: Leaves; R: Roots; S: Stem; SB: Stem Bark; SM: Skin/Mantle; SPR: Seed Pod Resin; T: Twigs; WP: Whole Plant.

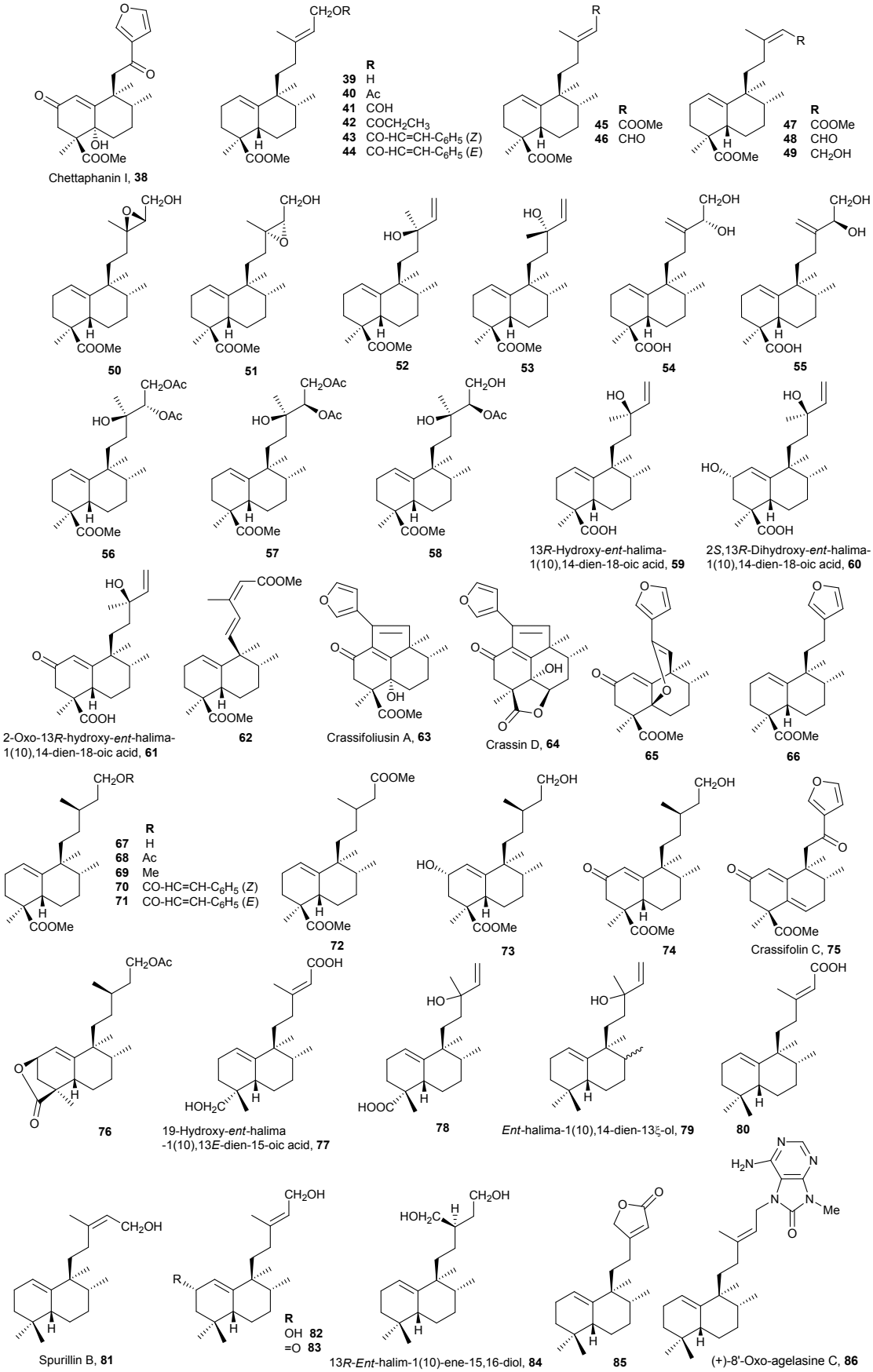


**Figure S1.** *Ent*-halim-1(10)-enes

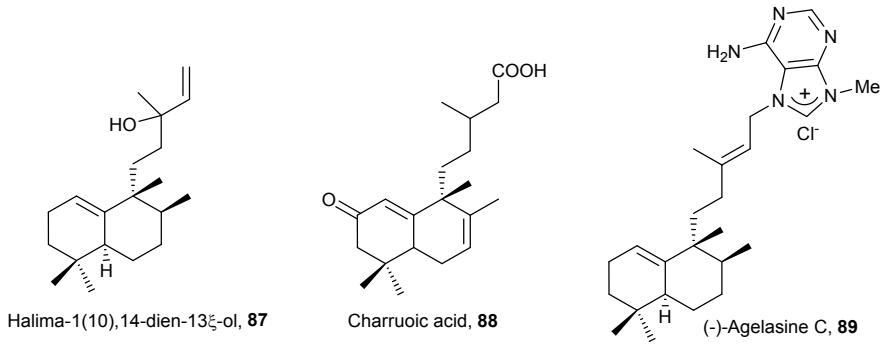


**Figure S2.** Halim-1(10)-enes

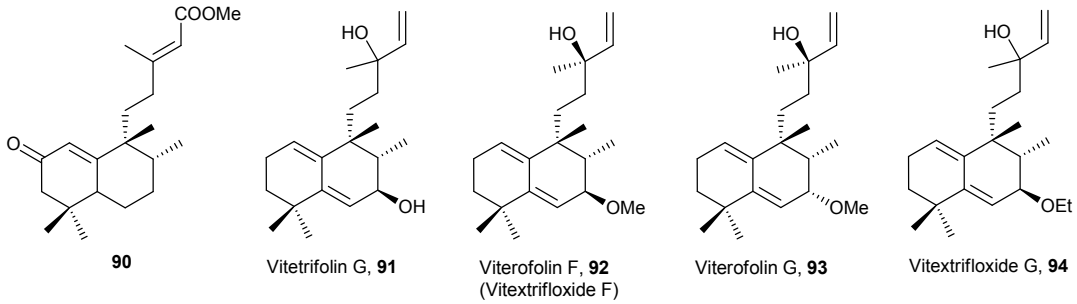


**Figure S3.** 8-Epi-halim-1(10)-ene

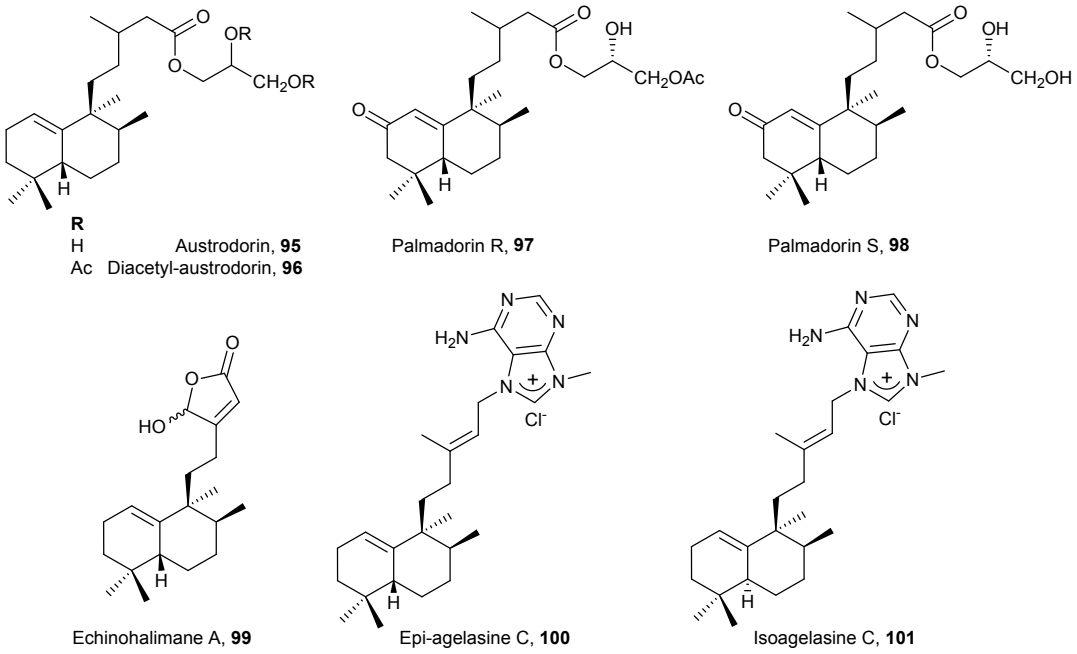


**Figure S4.** 8-Epi-*ent*-halim-1(10)-ene

**Table S2. Halim-5(10)-enes**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| ***Ent*-halim-5(10)-enes** | | * | | |
| Chettaphanin II, **102** | *Adenochlaena siamensis*<br>*Croton crassifolius* | R<br>R | | 2, 4, 5 |
| **103** | *Cladogynos orientalis*<br>*Croton caudatus* | R<br>T, L | | 6, 47 |
| Crotontomentosin F, **104** | *C. caudatus* | T, L | Not cytotoxic, not antitubercular, not antitumour | 47 |
| **105** | *Cladogynos orientalis* | R | Not cytotoxic, not antitubercular | 6 |
| **106** | *C. orientalis*<br>*Croton crassifolius* | R<br>R | Not cytotoxic, not antitubercular, moderate activity against HeLa cells | 3, 6, 48 |
| Crotohalimaneic acid, **107** | *Croton oblongifolius* (Syn. of *Chrozophora tinctoria*)<br>*Croton sylvaticus* | SB | Antitumour | 49-51 |
| Crotohalimoneic acid, **108** | *C. oblongifolius* | SB | Antitumour | 49, 50 |
| 12-Benzoyloxycrotohalimaneic acid, **109** | *C. oblongifolius* | SB | | 49, 50 |
| **110** | *Croton crassifolius* | R | Low cytotoxic | 52 |
| **111** | *C. crassifolius* | R | | 52 |
| Crassifolin A, **112** | *C. crassifolius* | R | Anti-angiogenic | 3, 53 |
| Crassifolin B, **113** | *C. crassifolius* | R | Anti-angiogenic, cytotoxic | 3, 53, 54 |
| Crassifolin D, **114** | *C. crassifolius* | R | Antiviral | 3, 53 |
| Crassifolin E, **115** | *C. crassifolius* | R | | 3, 53 |
| Crassifolin F, **116** | *C. crassifolius* | R | Anti-angiogenic, antiviral | 3, 53 |
| Crassifolin I, **117** | *C. crassifolius* | R | | 54, 55 |
| **118** | *C. macrostachyus* | R | | 56 |
| Crassifolin J, **119** | *C. crassifolius* | R | | 53 |

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|---|---|---|---|---|
| Crassifolin K, **120** | *C. crassifolius* | R | | 53 |
| Crassifolin L, **121** | *C. crassifolius* | R | | 53 |
| Cracroson G, **122** | *C. crassifolius* | R | | 57 |
| Crassifolin M, **123** | *C. crassifolius* | R | | 53 |
| Crassifolin O, **124** | *C. crassifolius* | R | | 53 |
| Crassin C, **125** | *Croton crassifolius* | R | Not cytotoxic | 15 |
| Penduliflaworosin, **126** | *C. penduliflorus*<br>*C. crassifolius*<br>*C. sylvaticus* | R<br>R<br>R | Anti-angiogenic, antiviral | 3, 51, 53, 58, 59 |
| Mallotucin B, **127** | *Mallotus repandus* | | | 60 |
| Crolaevinoid A, **128** | *Croton laevigatus* | T | Anti-inflammatory | 61 |
| Crolaevinoid B, **129** | *C. laevigatus* | T | Anti-inflammatory | 61 |
| Crothalimene A, **130** | *C. dichogamus* | R | | 62 |
| **131** | *Polyalthia longifolia* | SB | | 23 |
| **132** | *P. longifolia* | SB | | 23 |
| Crassin H, **133** | *Croton crassifolius* | R | Cytotoxic | 15 |
| Pseudoeluterin B, **134** | *C. eluteria* | BB | | 63 |
| Formosin A, **135** | *Excoecaria formosana* | T | Antimicrobial | 64 |
| Formosin B, **136** | *E. formosana* | T | | 64 |
| Formosin C, **137** | *E. formosana* | T | | 64 |
| Crassifolius B, **138** | *Croton crassifolius* | R | | 65 |
| 3α-Hydroxy-5(10)-didehydrochiliolide, **139** | *Nardophyllum bryoides* | AP | Antitumour | 66 |
| **140** | *Alomia myriadenia* (Syn. of *Ageratum myriadenium*) | AP | Antitumour | 67 |
| **141** | *Jungermannia hyalina* | WP | | 68 |
| **142** | *Polyalthia longifolia* | SB | | 23 |
| Isoscoparin N, **143** | *Isodon scoparius* | AP | | 69 |
| **144** | *Polyalthia longifolia* | SB | | 23 |
| **145** | *Amoora ouangliensis* (Syn. of *Aglaia* | B | Antitumour | 70 |

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|---|---|---|---|---|
| | *lawii*) | | | |
| **146** | *Jungermannia infusca* | WP | | 71 |
| Isoscoparin M, **147** | *Isodon scoparius* | AP | | 69 |
| Agelasine J, **148** | *Agelas mauritiana* | | Antimalaria, antimicrobial, cytotoxic | 46, 72 |
| **Halim-5(10)-enes** | | | | |
| Halim-5(10)-en-15-oic acid, **149** | Dominican amber | | Yeast growth inhibition | 73 |
| Halima-5(10),13*E*-diene-3α,15-diol, **150** | *Dysoxylum densiflorum* | B | | 74 |
| Halima-5(10),14-diene-3α,13ξ-diol, **151** | *D. densiflorum* | B | | 74 |
| Amoenolide L, **152** | *Amphiachyris amoena* | GP | | 75 |
| Amoenolide M, **153** | *A. amoena* | GP | | 75 |
| Crassifolius A, **154** | *Croton crassifolius* | R | Cytotoxic | 65 |
| Crassifolius C, **155** | *C. crassifolius* | R | | 65 |
| Agelasine O, **156** | *Agelas sp.* | | Antibacterial, antifungal | 76 |
| Agelasine S, **157** | *Agelas sp.* | | Antibacterial, antifungal | 76 |
| **8-Epi-halim-5(10)-enes** | | | | |
| **158** | *Stevia gilliesii* | AP | | 77 |
| Viteagnusin B, **159** | *Vitex agnus-castus* | Fr | | 78 |
| 13-Hydroxyhalima-5(10),14-dien-6-one, **160** | *V. trifolia* | L | | 79 |
| Viterofolin H, **161** | *V. rotundifolia* | Fr | Anti-hyperlipidemic | 39 |
| Vitetrifolin D, **162** | *V. agnus-castus*<br>*V. rotundifolia*<br>*V. trifolia* | Fr<br>Fr<br>L, Fr | Anti-inflammatory, cytotoxic | 36-38, 80, 81 |
| Vitetrifolin E, **163** | *V. trifolia* | Fr | | 36 |
| Vitetrifolin F, **164** | *V. trifolia* | Fr | | 36 |
| Vitetrifolin I, **165** | *V. trifolia* | L | | 37, 82 |
| Vitextrifloxide H, **166** | *V. trifolia* | L | Cytotoxic | 37 |
| Vitetrifolin H, **167** | *V. rotundifolia* | Fr | Anti-inflammatory | 38 |

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|---|---|---|---|---|
| Isoleojaponin, **168** | *Leonurus japonicus* | AP | | [83] |
| Marrubasch C, **169** | *Marrubium aschersonii* | AP | Anti-inflammatory | [84] |
| **8-Epi-*ent*-halim-5(10)-enes** | | | | |
| Salmantic acid, **170** | *Cistus laurifolius* | AP | | [85, 86] |
| Salmantic acid methyl ester, **171** | *C. laurifolius* | AP | | [85] |
| Salmantidiol, **172** | *C. laurifolius* | AP | | [85] |
| Leucasperone A, **173** | *Leucas aspera* | WP | Anti-inflammatory | [87] |
| Leucasperone B, **174** | *L. aspera* | WP | | [87] |

***Organism extraction part:** AP: Aerial Part; B: Bark; BB: Bitter Bark; Fr: Fruits; GP: Ground Part; L: Leaves; R: Roots; SB: Stem Bark; T: Twigs; WP: Whole Plant.

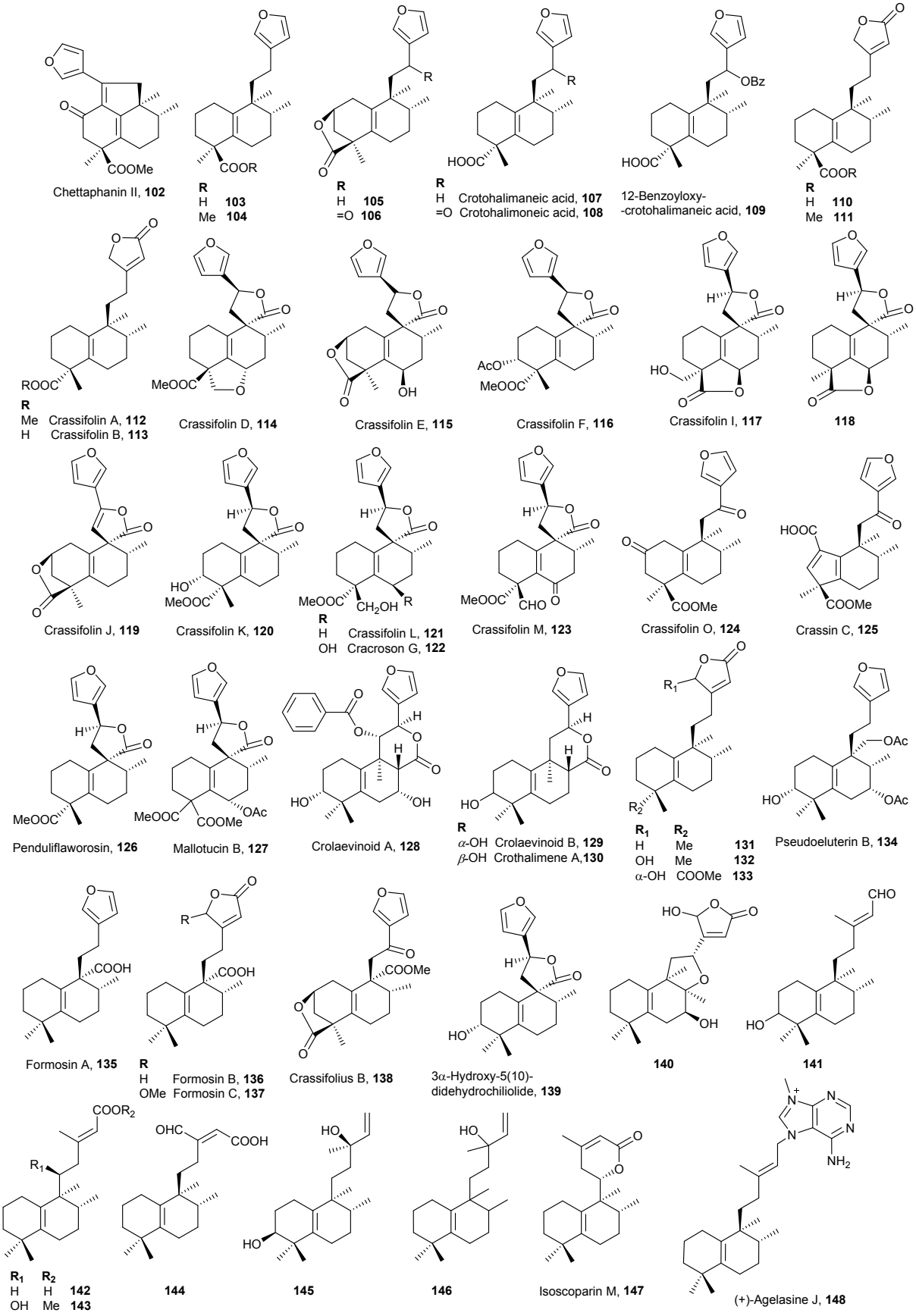



**Figure S5.** *Ent*-halim-5(10)-enes

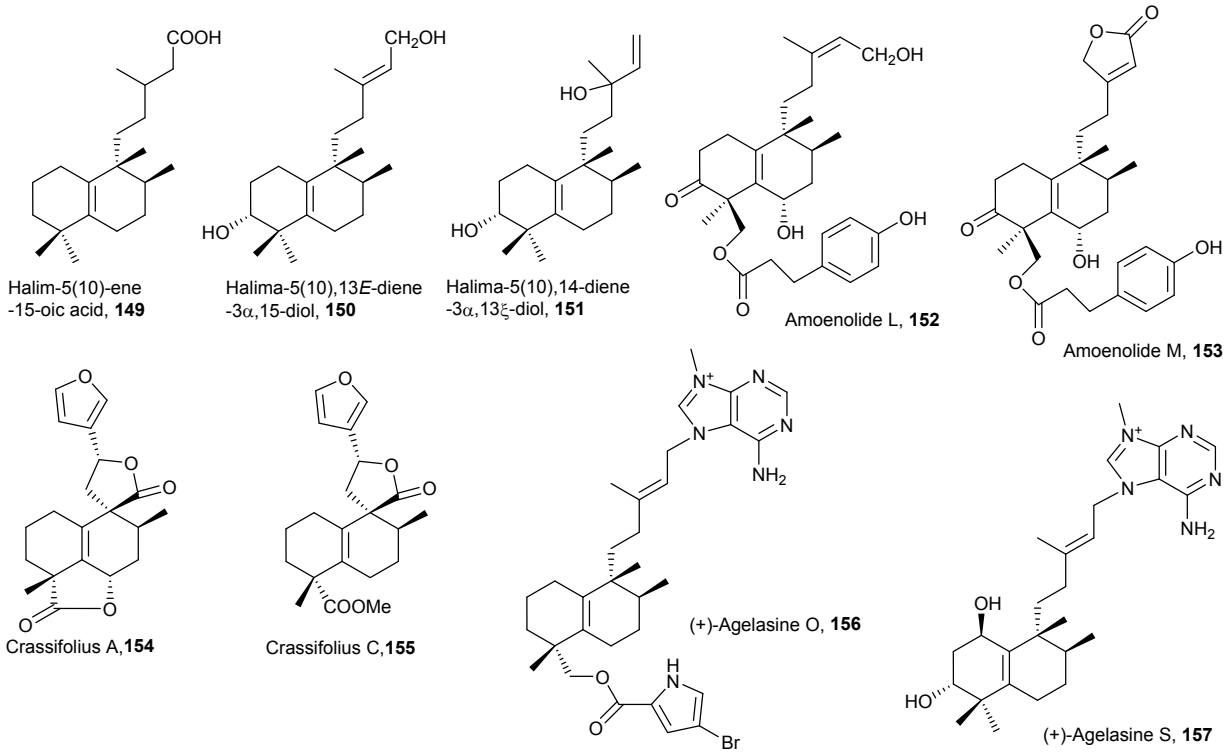



**Figure S6.** Halim-5(10)-enes

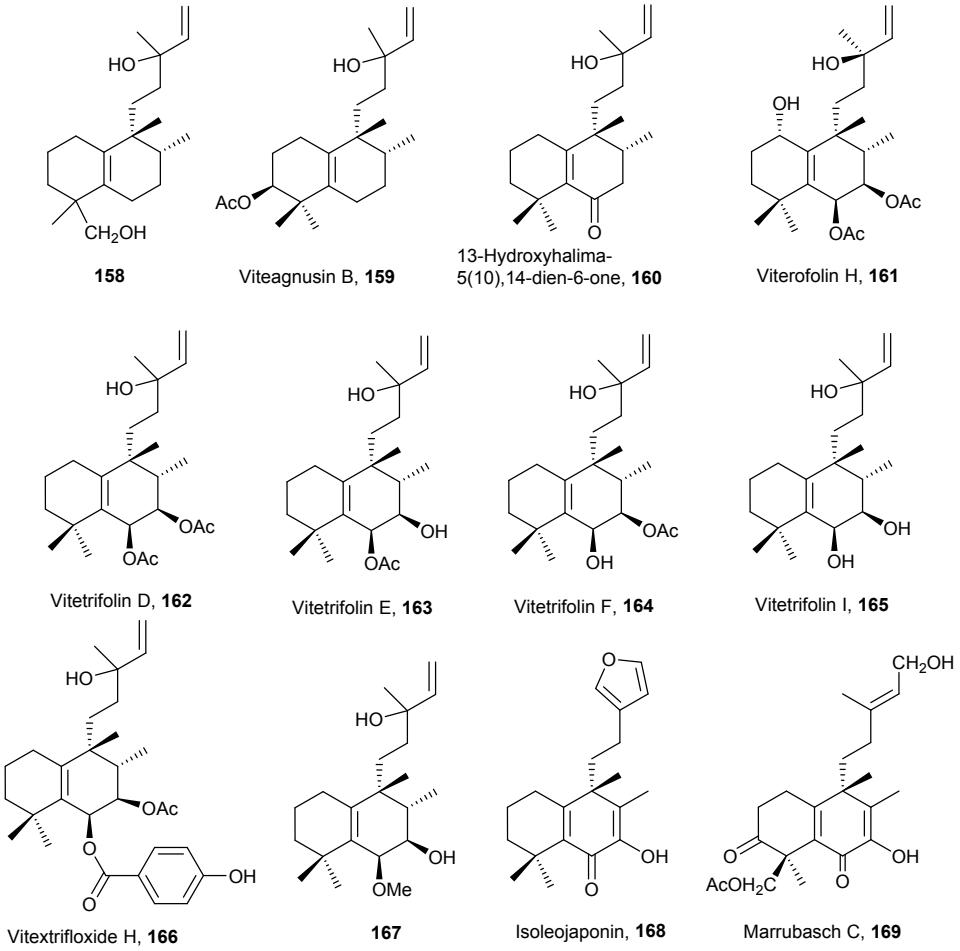



**Figure S7.** 8-Epi-halim-5(10)-enes

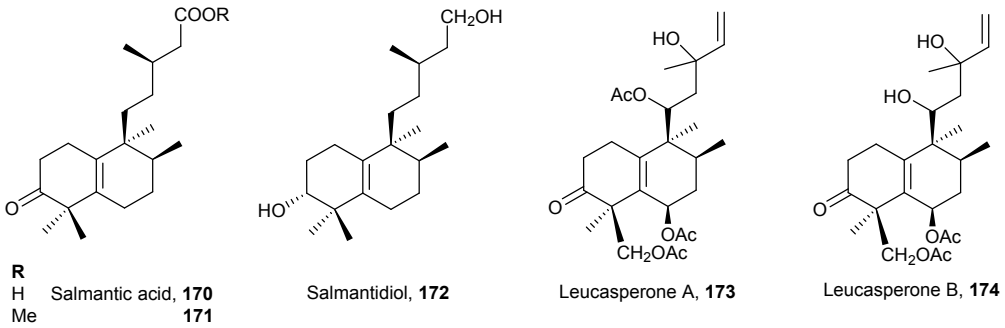



**Figure S8.** 8-Epi-*ent*-halim-5(10)-enes

**Table S3. Halim-5-enes**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| ***Ent*-halim-5-enes** | | * | | |
| 11*R*-Acetoxy-*ent*-halima-5,13*E*-dien-15-oic acid, **175** | *Plectranthus ornatus* | WP | Antimicrobial | 88, 89 |
| **176** | *Haplopappus paucidentatus* (Syn. of *H. glutinosus*) | AP | | 90 |
| **177** | *Relhania corymbosa*<br>*R. squarrosa* (Syn. of *Oedera squarrosa*) | AP<br>AP | | 91 |
| **178** | *R. corymbosa*<br>*R. squarrosa* | AP<br>AP | | 91 |
| Salicifolic acid, **179** | *Baccharis salicifolia* (Syn. of *B. salicina*) | AP | Germination inhibition | 92 |
| Crothalimene B, **180** | *Croton dichogamus* | R | | 62 |
| 3α-Hydroxy-5,6-didehydrochiliolide, **181** | *Chiliotrichum rosmarinifolium*<br>*Nardophyllum bryoides* | AP<br>AP | Antitumour | 66, 93 |
| **Halim-5-enes** | | | | |
| Tuberculosinol, **182** | *Mycobacterium tuberculosis* | | | 94-99 |
| Nosyberkol, Isotuberculosinol, **183** | *Raspailia sp.*<br>*Mycobacterium tuberculosis* | | | 94, 96-101 |
| Tuberculosene, **184** | *Kitasatospora griseola* | | | 95, 102 |
| Koanophyllic acid B, **185** | *Koanophyllon conglobatum* | AP | | 103 |
| **186** | *Haplopappus pulchellus* | AP | | 104 |

| | | | | |
|---|---|---|---|---|
| **187** | *H. pulchellus* | AP | | 104 |
| **188** | *H. pulchellus* | AP | | 104 |
| **189** | *H. pulchellus* | AP | | 104 |
| **190** | *H. pulchellus* | AP | | 104 |
| **191** | *H. pulchellus* | AP | | 104 |
| Koanophyllic acid A, **192** | *Koanophyllon conglobatum* | AP | | 103 |
| **193** | *Acalypha macrostachya* | S | | 105 |
| **194** | *A. macrostachya* | S | | 105 |
| **195** | *Colophospermum mopane* | Se | Antimicrobial | 106 |
| Koanophyllic acid D, **196** | *Koanophyllon conglobatum* | AP | | 103 |
| Koanophyllic acid C, **197** | *K. conglobatum* | AP | | 103 |
| Micromonohalimane A, **198** | *Micromonospora sp.* | | Antibacterial | 107 |
| Micromonohalimane B, **199** | *Micromonospora sp.* | | Antibacterial | 107 |
| 1-Tuberculosinyl adenosine (1-TbAd), **200** | *Mycobacterium tuberculosis* | | *M. tuberculosis* biomarker | 108, 109 |
| $N^6$-Tuberculosinyl adenosine ($N^6$-TbAd), **201** | *M. tuberculosis* | | *M. tuberculosis* biomarker | 108, 109 |
| **8-Epi-halim-5-enes** | | | | |
| Viteagnusin A, **202** | *Vitex agnus-castus* | Fr | | 78 |
| Viterofolin C, **203** | *V. rotundifolia* | Fr | | 39 |
| Viterofolin D, **204** | *V. rotundifolia* | Fr | | 39 |
| Viterofolin E, **205** | *V. rotundifolia* | Fr | | 39 |
| **206** | *Salvia sclarea* | | | 102 |
| **207** | *Kitasatospora griseola* | | | 102 |

***Organism extraction part:** AP: Aerial Part; Fr: Fruits; R: Roots; S: Stem; Se: Seeds; WP: Whole Plant.

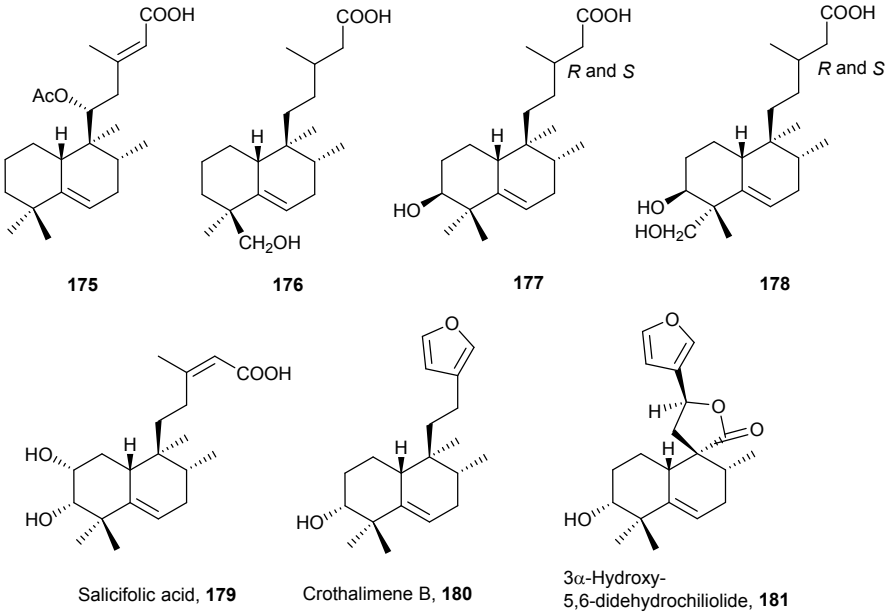
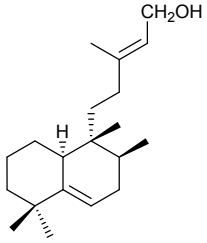
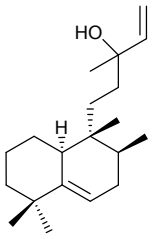


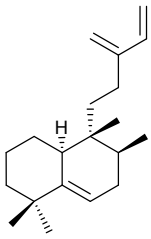

**Figure S9.** *Ent*-halim-5-ene



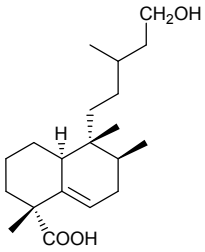
Tuberculosinol, **182**



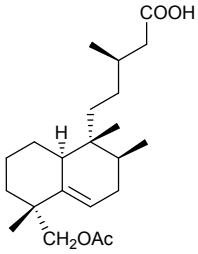
Isotuberculosinol, **183** (Nosyberkol)



Tuberculosene, **184**



Koanophyllic acid B, **185**



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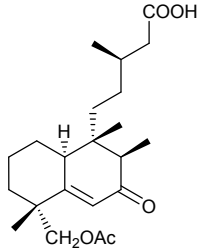

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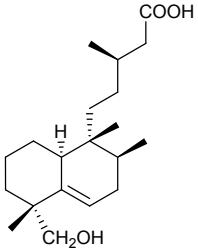

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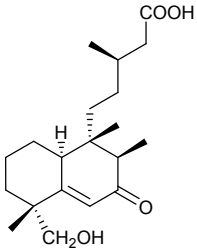

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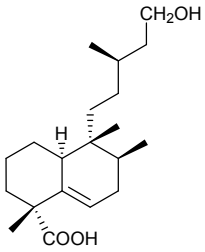

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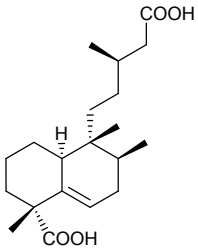

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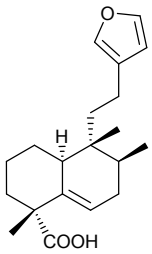
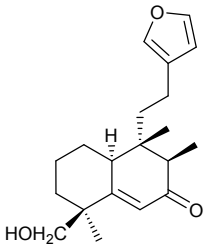


Koanophyllic acid A, **192**



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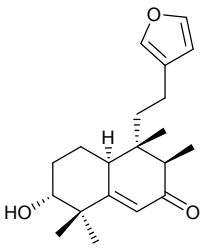

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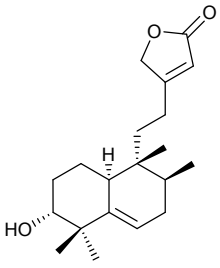

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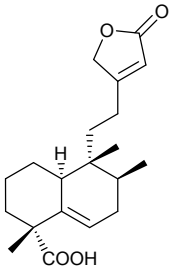
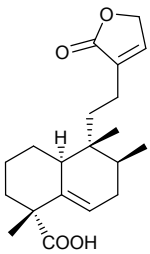
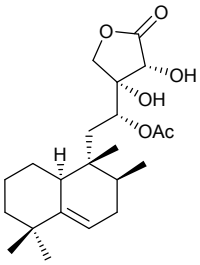


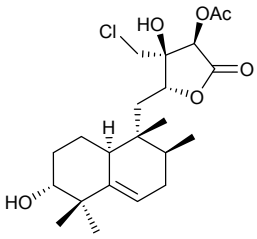
Koanophyllic acid D, **196**



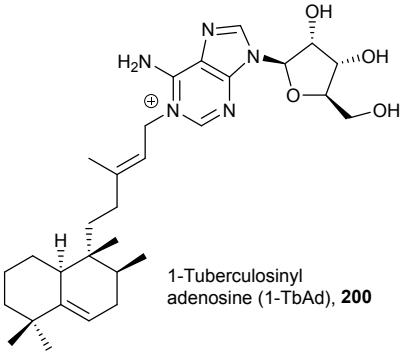
Koanophyllic acid C, **197**



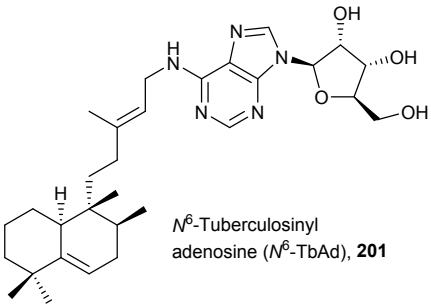
Micromonohalimane A, **198**



Micromonohalimane B, **199**

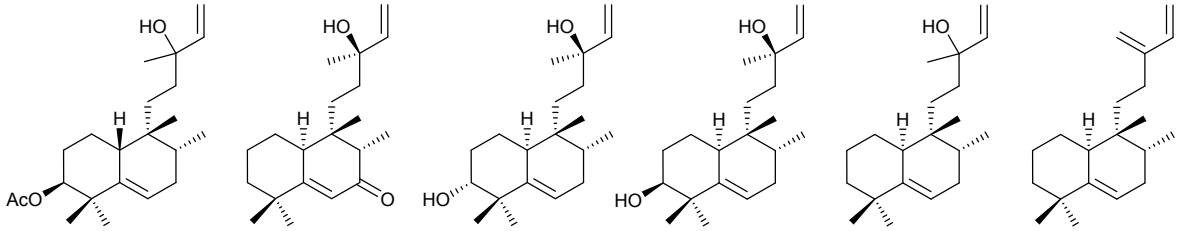


1-Tuberculosinyl adenosine (1-TbAd), **200**



$N^6$-Tuberculosinyl adenosine ($N^6$-TbAd), **201**

**Figure S10.** Halim-5-enes




Viteagnusin A, **202** Viterofolin C, **203** Viterofolin D, **204** Viterofolin E, **205** **206** **207**

**Figure S11.** 8-Epi-halim-5-enes

**Table S4. Dihydrohalimenes**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| **Dihydrohalimenes** | | * | | |
| Pleuroziol, **208** | *Pleurozia gigantea*<br>*Jungermannia truncata* | WP | | 110, 111 |
| 5β-Hydroxy-6-hydro-salicifolic acid, **209** | *Baccharis salicifolia* | AP | Germination inhibition | 92 |
| Ambliol B, **210** | *Dysidea amblia* | | | 112, 113 |
| Ambliol C, **211** | *D. amblia* | | | 113 |
| Cracroson D, **212** | *Croton crassifolius* | R | Low cytotoxic | 57 |
| 3α,5α-Dihydroxychiliolide, **213** | *Chiliotrichum rosmarinifolium* | AP | | 93 |
| 3α-Hydroxy-5β,10β-epoxychiliolide, **214** | *C. rosmarinifolium* | AP | | 93, 114 |
| **215** | *Heteroscyphus coalitus* | WP | | 115 |
| 3β,5β,16*S*-Trihydroxyhalim-13-en-15,16-olide, **216** | *Polyalthia longifolia* | L | Not cytotoxic | 116 |
| (+)-Agelasimine A, **217** | *Agelas mauritiana* | | Cytotoxic<br>Adenosine transfer into rabbit erythrocytes inhibition.<br>$Ca^{2+}$-channel antagonistic action.<br>α1 Adrenergic blockade | 117, 118 |
| (+)-Agelasimine B, **218** | *A. mauritiana* | | Cytotoxic<br>Adenosine transfer into rabbit erythrocytes inhibition.<br>$Ca^{2+}$-channel antagonistic action.<br>α1 Adrenergic blockade | 117, 118 |
| Diasin, **219** | *Croton diasii* | TW | | 119 |

***Organism extraction part:** AP: Aerial Part; L: Leaves; R: Roots; TW: Trunk Wood; WP: Whole Plant.

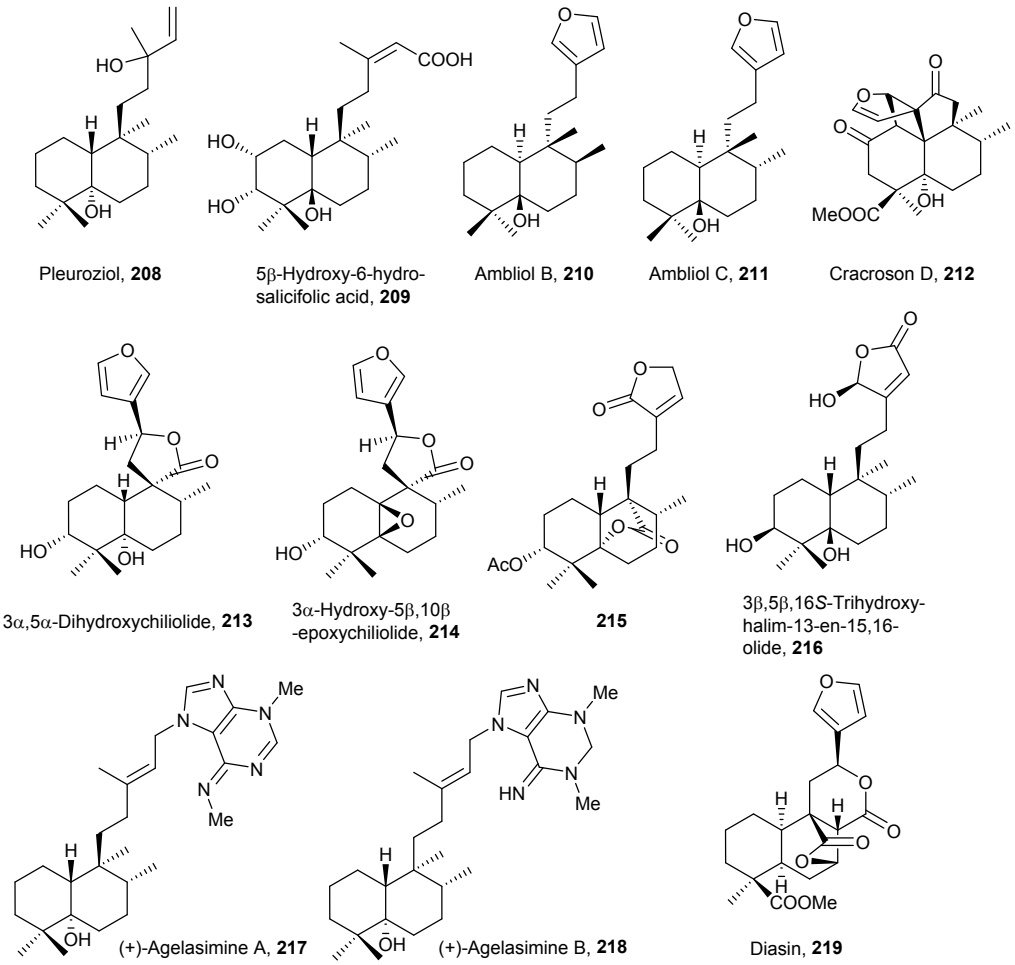



**Figure S12.** Dihydrohalimenes

**Table S5. Secohalimenes and norhalimenes**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| **Secohalimenes** | | * | | |
| Tessmannic acid, **220** | *Tessmannia densiflora* | R, SB | Antibacterial, antifungal, mosquito repellency, weak mosquitocidal | 120, 121 |
| Tessmannic acid methyl ester, **221** | *T. densiflora* | R, SB | Antibacterial, antifungal, mosquito repellency, weak mosquitocidal | 120, 121 |
| **222** | *T. densiflora* | R, SB | | 120, 121 |
| **223** | *T. densiflora* | R, SB | | 120, 121 |

| | | | | |
|---|---|---|---|---|
| Secochiliotrin methyl ester, **224** | *Chiliotrichum rosmarinifolium*<br>*Nardophyllum lanatum* | AP<br>AP | | 93 |
| Secochiliolide acid, **225** | *C. rosmarinifolium*<br>*N. lanatum*<br>*N. bryoides* | AP<br>AP<br>AP | Antitumour | 66, 93 |
| Secochiliolide acid methyl ester, **226** | *C. rosmarinifolium*<br>*N. bryoides* | AP<br>AP | Antitumour | 66, 93 |
| 19-Hydroxysecochiliolide acid, **227** | *N. lanatum* | AP | | 93 |
| 19-Hydroxysecochiliolide acid methyl ester, **228** | *N. lanatum* | AP | | 93 |
| Secochiliolide aldehyde, **229** | *Chiliotrichum rosmarinifolium* | AP | | 93 |
| **230** | *Nardophyllum bryoides* | AP | Antitumour | 66 |
| **231** | *Heteroscyphus coalitus* | WP | | 115 |
| Secochiliolide lactone, **232** | *Nardophyllum lanatum* | AP | | 93 |
| **Norhalimenes** | | | | |
| Isoteuflin, **233** | *Croton crassifolius*<br>*Teucrium canadense* | R<br>AP | | 54, 122 |
| Teupolin VIII, **234** | *Teucrium polium* | L | Low hepatotoxic | 123, 124 |
| Teucvin (Mallotucin A), **235** | *Teucrium viscidum*<br>*Mallotus repandus*<br>*Teucrium chamaedrys* | AP | | 60, 125-128 |
| Crotoeurin B, **236** | *Croton euryphyllus* | L, T | Nerve Growth Factor (NGF) potentiating activity | 124, 129 |
| **237** | *Halimium viscosum* | AP | | 8, 130 |
| **238** | *H. viscosum* | AP | | 10 |
| **239** | *H. viscosum* | AP | | 8, 130 |
| **240** | *H. viscosum* | AP | | 130 |
| **241** | *H. viscosum* | AP | | 130 |
| **242** | *Vellozia stipitata* | R, TW | | 131 |

| | | | | |
|---|---|---|---|---|
| **243** | *V. flavicans* (Syn. of *V. squamata*) | R, TW | | 132 |
| **244** | *V. flavicans* | R, TW | | 132 |
| **245** | *Mycale euplectellioides* | | | 133 |

***Organism extraction part:** AP: Aerial Part; L: Leaves; R: Roots; SB: Stem Bark; T: Twigs; TW: Trunk Wood; WP: Whole Plant.

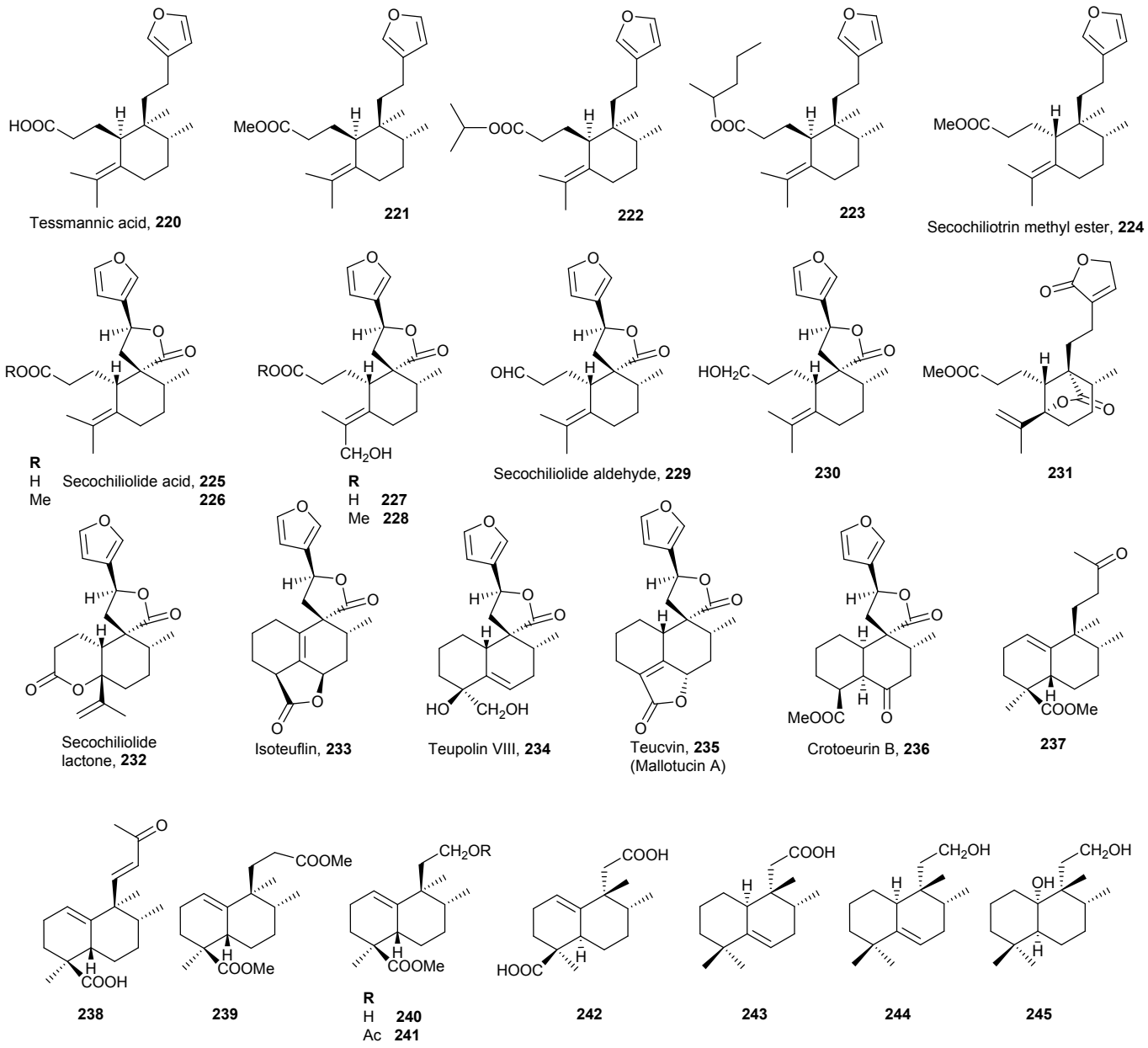



**Figure S13.** Seco- and norhalimenes

**Table S6. Rearranged halimane type**

| | NATURAL SOURCE | | ACTIVITY | REF. |
|---|---|---|---|---|
| **Rearranged halimane type** | | * | | |
| Scopariusin A, **246** | *Isodon scoparius* | AP | | 69 |
| Scopariusin B, **247** | *I. scoparius* | AP | | 69 |
| Scopariusin C, **248** | *I. scoparius* | AP | | 69 |
| Randainin A, **249** | *Callicarpa randaiensis* | L, T | | 134 |
| Randainin B, **250** | *C. randaiensis* | L, T | | 134 |
| Randainin C, **251** | *C. randaiensis* | L, T | | 134 |
| Randainin D, **252** | *C. randaiensis* | L, T | Anti-inflammatory | 134 |
| Viterofolin A, **253** | *Vitex rotundifolia* | Fr | | 39 |
| Viterofolin B, **254** | *V. rotundifolia* | Fr | | 39 |
| Dytesinin A, **255** | *Cystodytes sp.* | | | 135 |
| Dytesinin B, **256** | *Cystodytes sp.* | | | 135 |
| **257** | *Echinomuricea sp.* | | Cytotoxic, anti-inflammatory | 136 |
| Methyl dodonate A, **258** | *Dodonaea viscosa* | L | | 137 |
| Methyl dodonate B, **259** | *D. viscosa* | L | | 137 |
| Methyl dodonate C, **260** | *D. viscosa* | L | | 137 |
| Asmarine I, **261** | *Raspailia sp.* | | Cytotoxic | 101 |
| Asmarine J, **262** | *Raspailia sp.* | | Cytotoxic | 101 |
| Jewenol B, **263** | *Portulaca* cv Jewel | AP | | 138 |
| Pilosanone A, **264** | *P. pilosa* | AP | | 139 |
| Pilosanone B, **265** | *P. pilosa* | AP | | 139 |
| Portulenone, **266** | *P. grandiflora* | AP | | 140 |
| Portulenol, **267** | *P. grandiflora* | AP | | 140 |
| Portulene, **268** | *P. grandiflora* | AP | | 140 |
| Pilosanone C, **269** | *P. pilosa* | AP | | 141 |
| Methyl dodovisate A, **270** | *Dodonaea viscosa* | AP | | 142 |

| | | | | |
|---|---|---|---|---|
| Methyl dodovisate B, **271** | *D. viscosa* | AP | | 142 |
| 5α-Hydroxy-5,10-dihydroprintzianic acid, **272** | *Conyza scabrida* | AP | | 143 |
| 5α-Methoxy-5,10-dihydroprintzianic acid, **273** | *C. scabrida* | AP | | 143 |
| Aparisthman, **274** | *Aparisthmium cordatum* | B | Antiulcerogenic | 144 |
| **275** | *Croton cortesianus* | AP | | 145 |
| **276** | *Conyza scabrida* | AP | | 143 |
| 5α-Hydroxy-5,10-dihydroprintzianic lactone, **277** | *C. scabrida* | AP | | 143 |
| 5α-Hydroxy-1,2-dehydro-5,10-dihydroprintzianic acid, **278** | *C. scabrida* | AP | | 143 |
| 5,6-Dehydroisoconyscabranic acid, **279** | *C. scabrida* | AP | | 143 |
| 5,6-Dehydroconyscabranic acid, **280** | *C. scabrida* | AP | | 143 |
| 5α-Hydroxyisoconyscabranic acid, **281** | *C. scabrida* | AP | | 143 |
| 5α-Hydroxyconyscabranic acid, **282** | *C. scabrida* | AP | | 143 |
| Scapanialide B, **283** | *Scapania parva* (Syn. of *S. verrucosa*) | WP | | 146 |

***Organism extraction part:** AP: Aerial Part; B: Bark; Fr: Fruits; L: Leaves; T: Twigs; WP: Whole Plant.

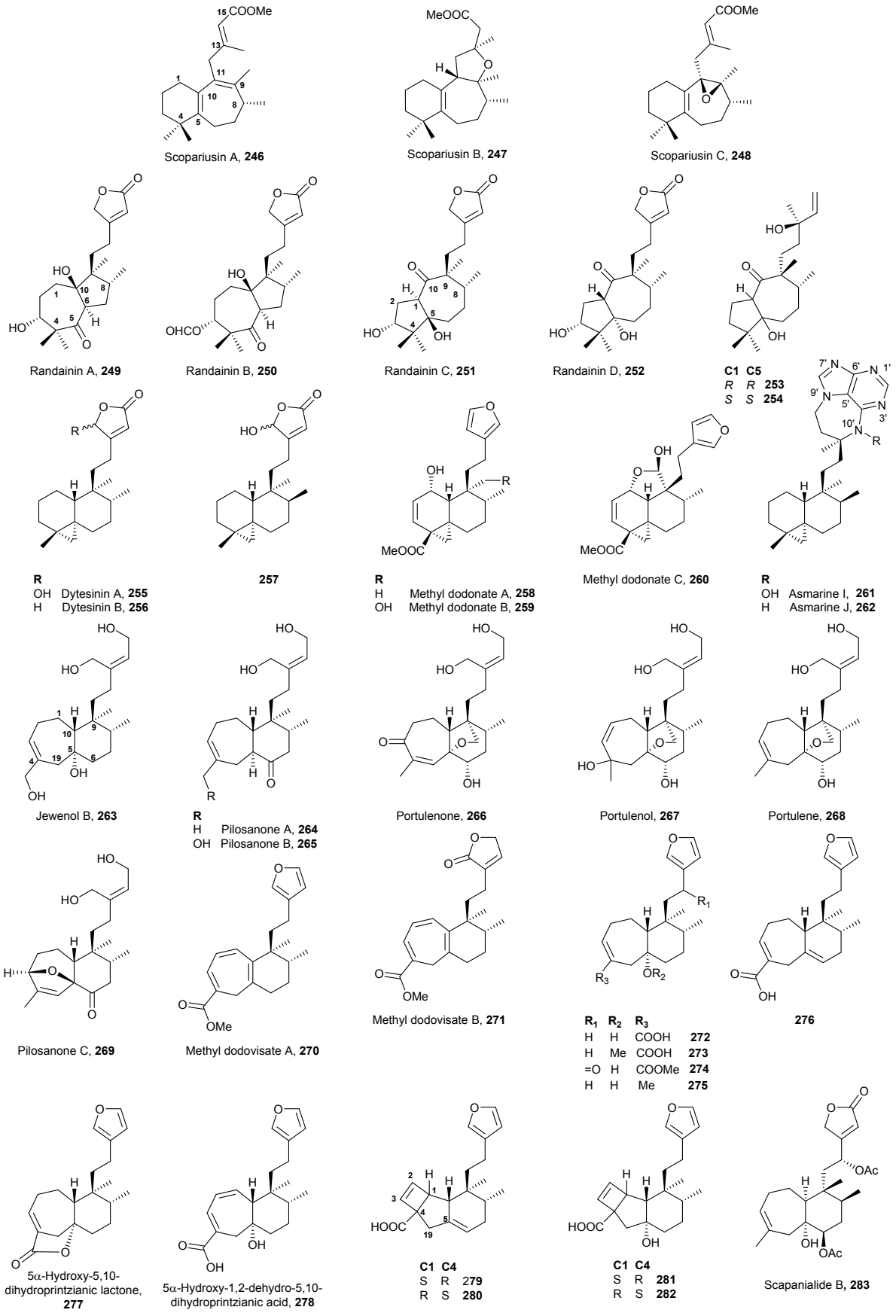



**Figure S14.** Rearranged halimanes

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