Electronic Supplementary Material (ESI) for Natural Product Reports.

Sesterterpenoids: Chemistry, Biology, and Biosynthesis

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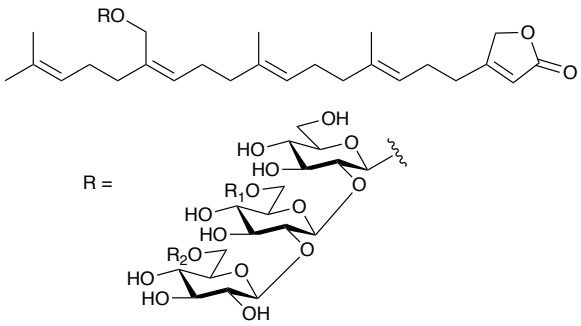
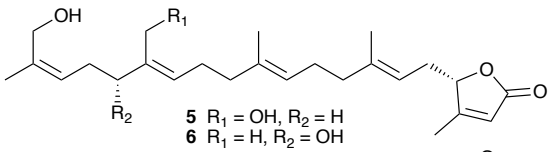
Supporting Information

Contents – Compilation of all the sesterterpenoid structures

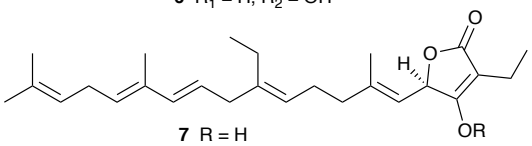


R =

1 R_1 = H, R_2 = H
2 R_1 = Ac, R_2 = H
3 R_1 = H, R_2 = Ac
4 R_1 = Ac, R_2 = Ac



5 R_1 = OH, R_2 = H
6 R_1 = H, R_2 = OH



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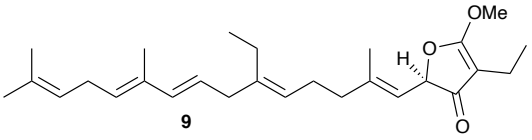

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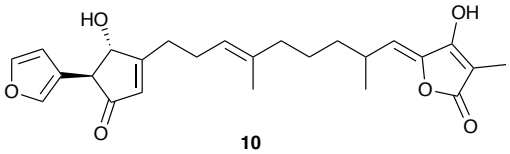

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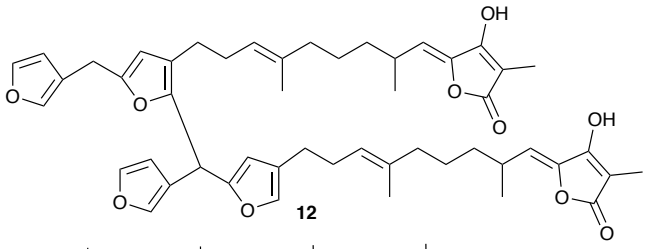

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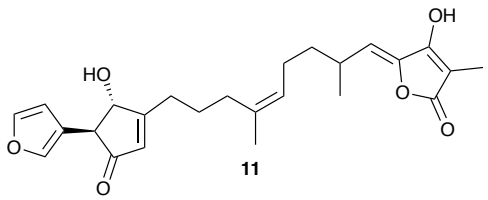

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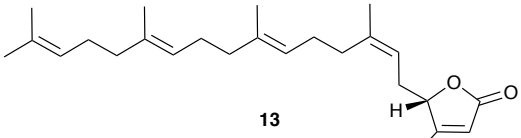

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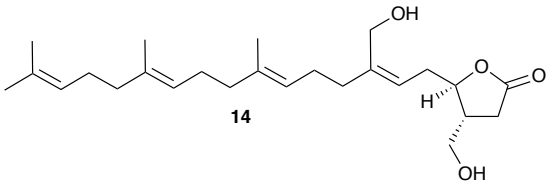

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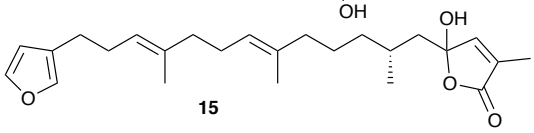

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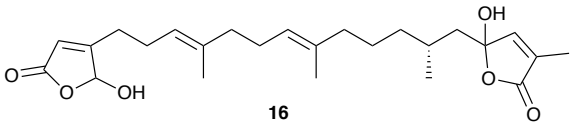

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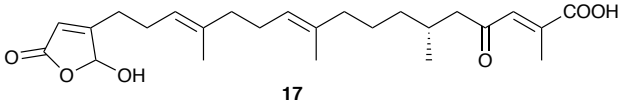

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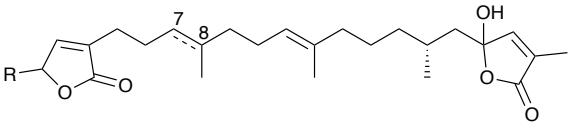
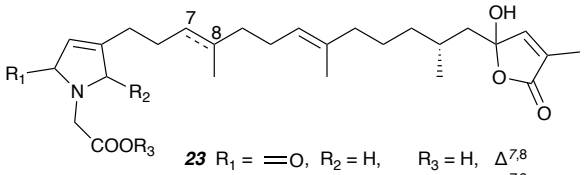
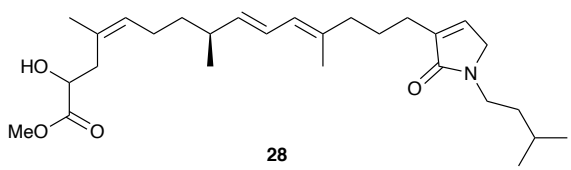


18 R = OH, $\Delta^{7,8}$
19 R = OMe, $\Delta^{7,8}$
20 R = OEt, $\Delta^{7,8}$
21 R = OH, 8 -OH
22 R = OEt, 8 -OH



23 R_1 = =O, R_2 = H, R_3 = H, $\Delta^{7,8}$
24 R_1 = H, R_2 = =O, R_3 = H, $\Delta^{7,8}$
25 R_1 = H, R_2 = =O, R_3 = Me, $\Delta^{7,8}$
26 R_1 = =O, R_2 = H, R_3 = H, 8 -OH
27 R_1 = H, R_2 = =O, R_3 = H, 8 -OH



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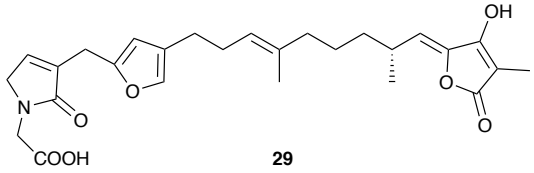

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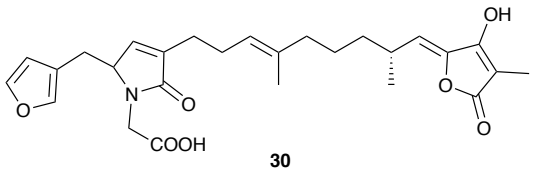

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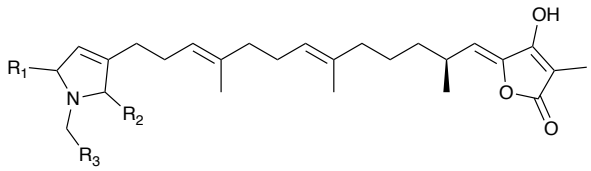
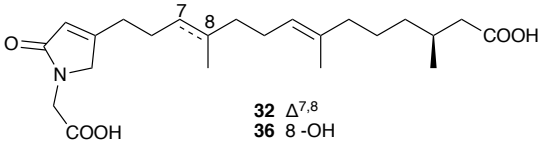
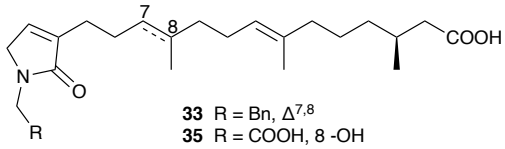


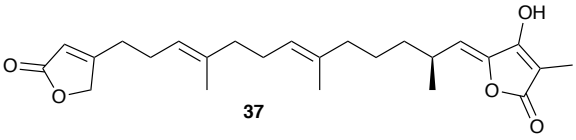
31 R_1 = =O, R_2 = H_2, R_3 = COOH
34 R_1 = H_2, R_2 = =O, R_3 = Bn



32 $\Delta^{7,8}$
36 8 -OH



33 R = Bn, $\Delta^{7,8}$
35 R = COOH, 8 -OH



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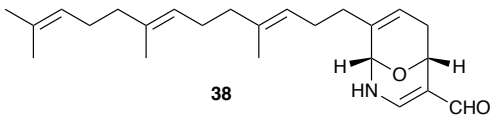

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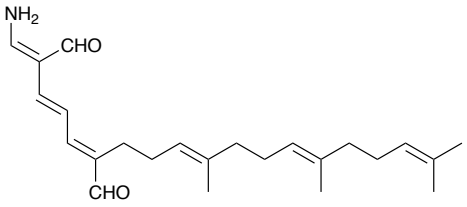

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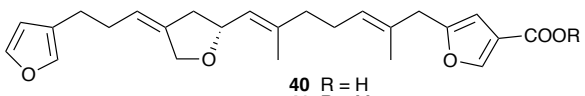

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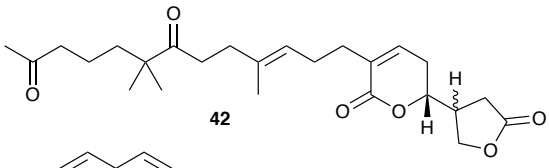
41 R = Me



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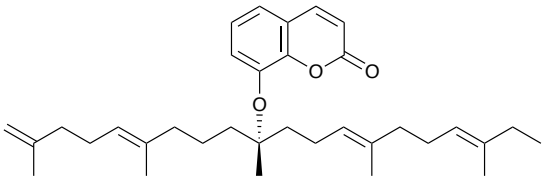

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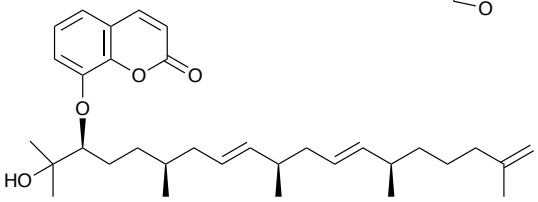

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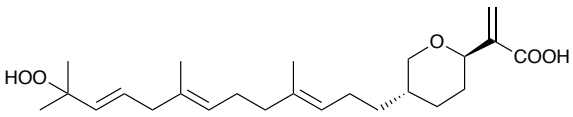

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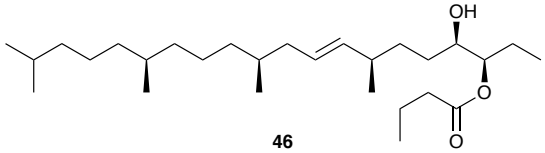

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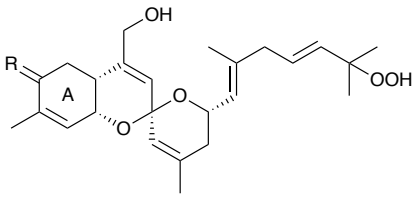
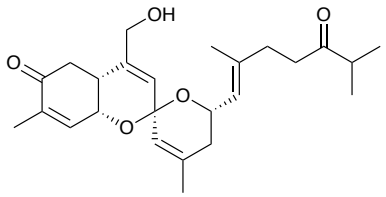


47 R = O
49 R = *R* -OAc
50 R = *S* -OAc



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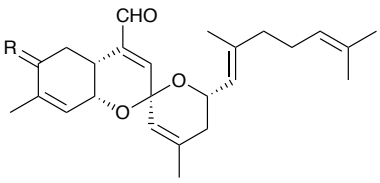
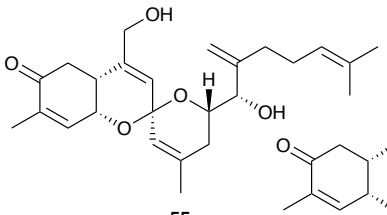


51 R = *R* -OH
52 R = O
53 R = *R* -OAc
54 R = *S* -OAc



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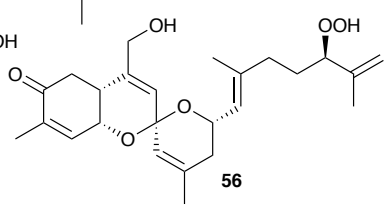

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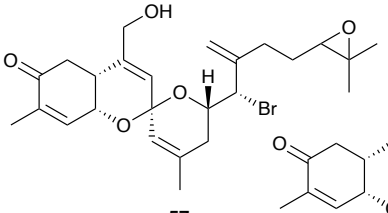

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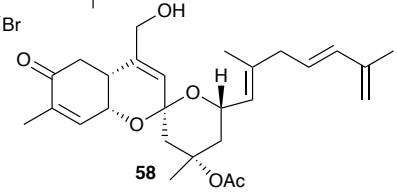

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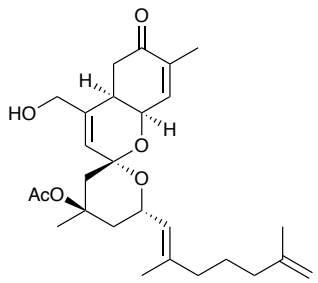

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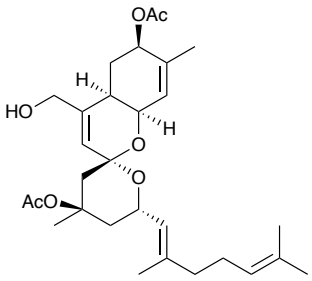

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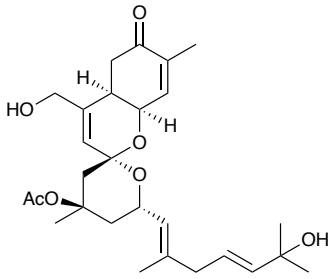

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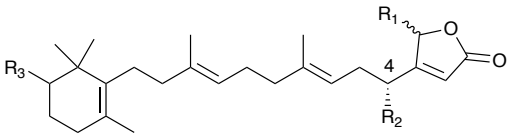
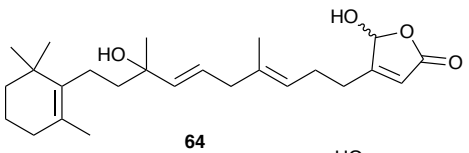


62 R_1 = H, R_2 = OH, R_3 = =O
63 R_1 = OH, R_2 = H, R_3 = =O
66 R_1 = H, R_2 = OH, R_3 = H
67 R_1 = H, R_2 = OAc, R_3 = =O



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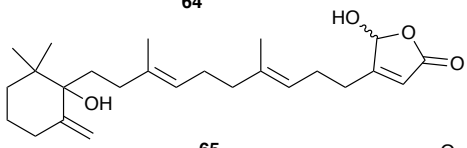

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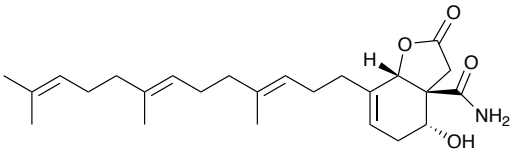

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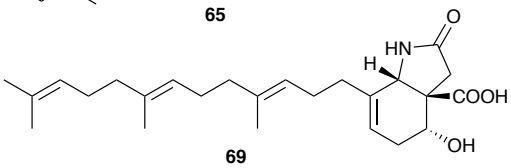

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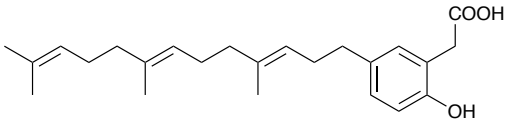

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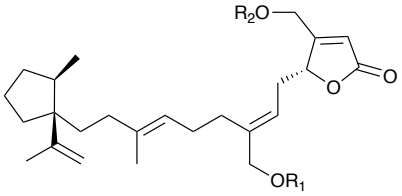
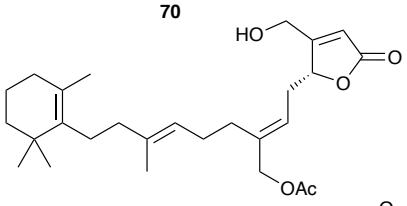


71 R_1 = Ac, R_2 = H
72 R_1 = Ac, R_2 = Ac
73 R_1 = H, R_2 = H



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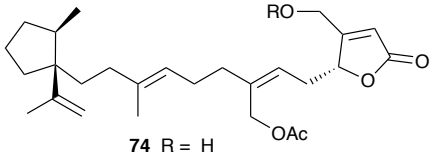
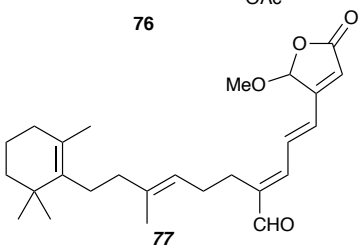


74 R = H
75 R = Ac



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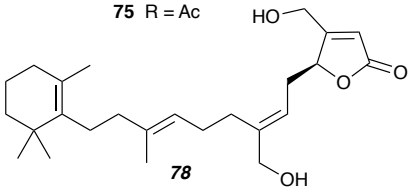

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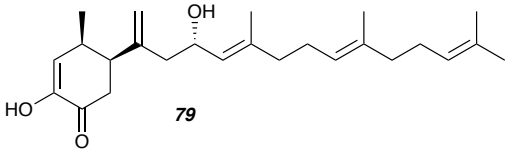

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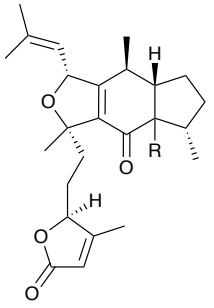
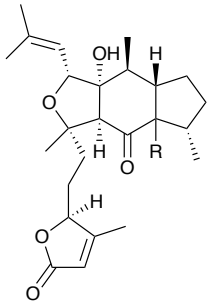
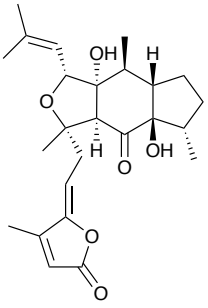


80 R = *β*-OH
81 R = *α*-OH



82 R = *β*-OH
83 R = *α*-OH
84 R = *β*-H
85 R = *α*-H



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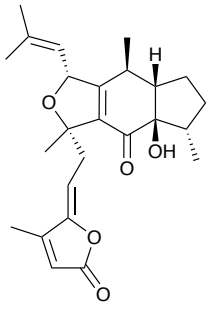

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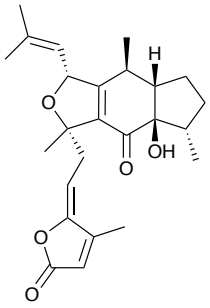

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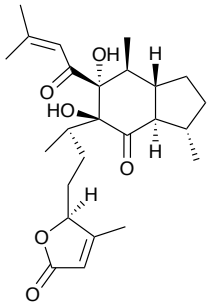

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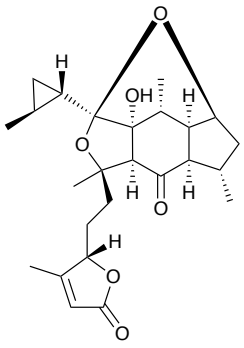

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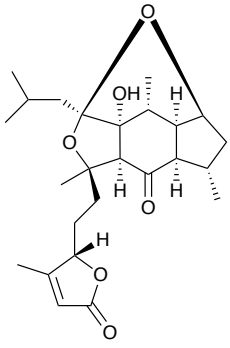

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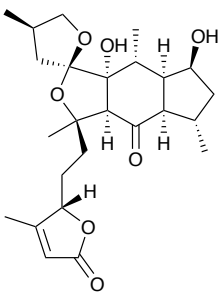

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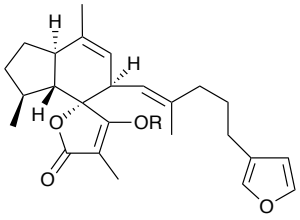
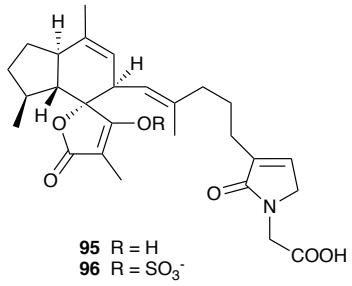
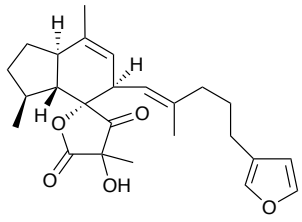


93 R = H
94 R = SO_3^-



95 R = H
96 R = SO_3^-



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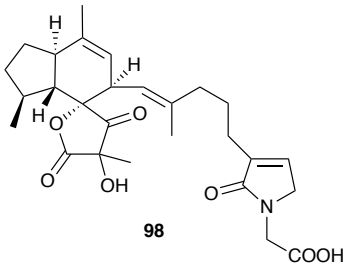
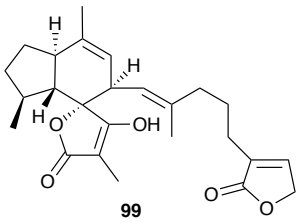


98



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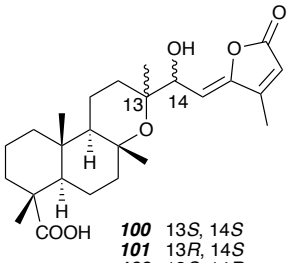
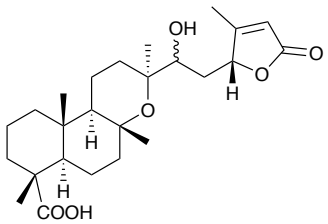


100 13*S*, 14*S*
101 13*R*, 14*S*
102 13*S*, 14*R*



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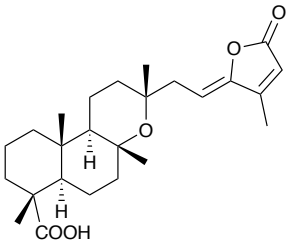
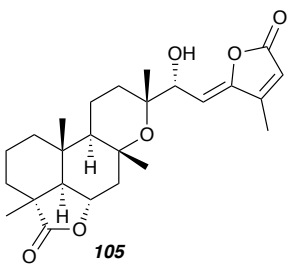


104



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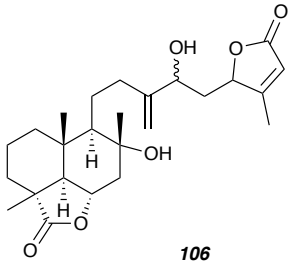

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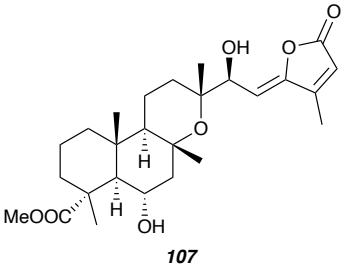

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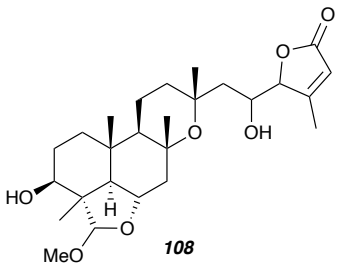
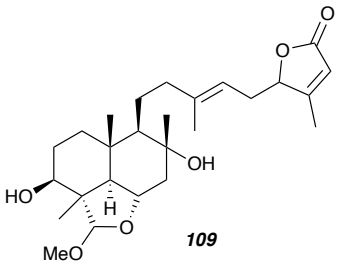
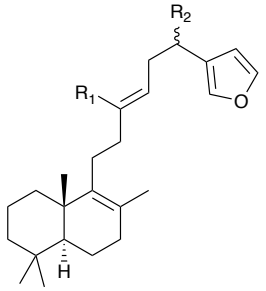


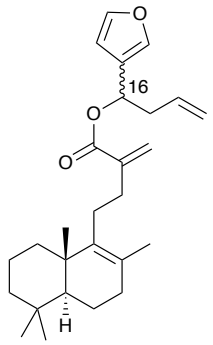
108



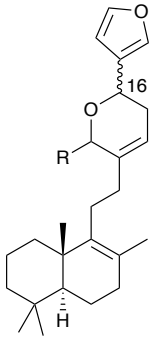
109



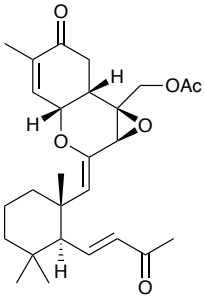
110 $R_1 = CH_2OH$, $R_2 = S$-OAc
111 $R_1 = CH_2OH$, $R_2 = R$-OAc
112 $R_1 = CHO$, $R_2 = S$-OAc
113 $R_1 = CHO$, $R_2 = R$-OAc
114 $R_1 = COOH$, $R_2 = S$-OAc
115 $R_1 = COOH$, $R_2 = R$-OAc
116 $R_1 = COOH$, $R_2 = S$-OH
117 $R_1 = COOH$, $R_2 = R$-OH
118 $R_1 = COOMe$, $R_2 = =O$
119 $R_1 = COOMe$, $R_2 = R$-OH
120 $R_1 = CH_2OH$, $R_2 = R$-OH



121 16*R*
122 16*S*



123 16*R*, R = =O
124 16*S*, R = =O
129 16*S*, R = OH



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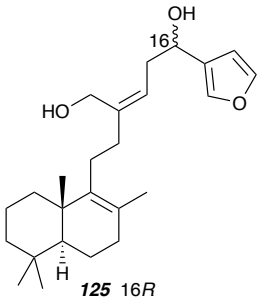
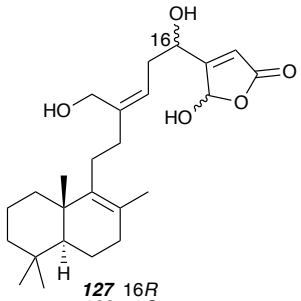
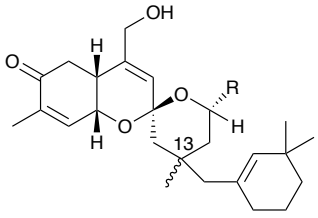


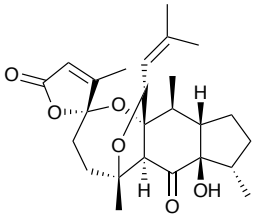
125 16*R*
126 16*S*



127 16*R*
128 16*S*



131 R = OMe, 13*R*
132 R = OMe, 13*S*
133 R = OH, 13*R*



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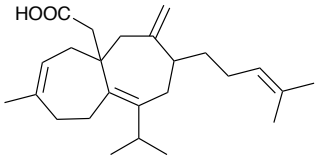

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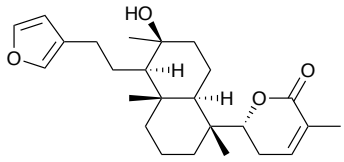

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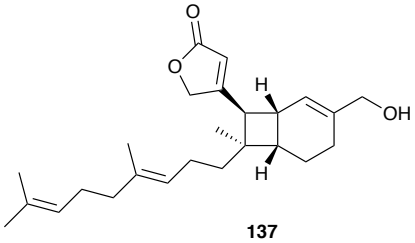
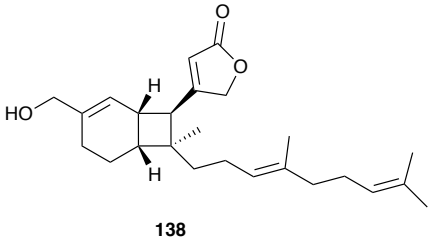


137



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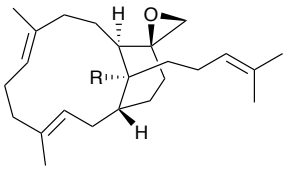
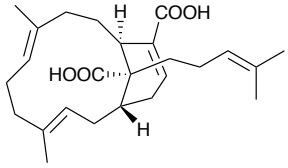


139 R = CHO
140 R = COOH



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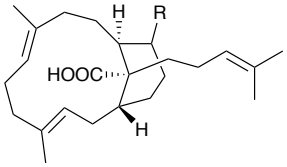
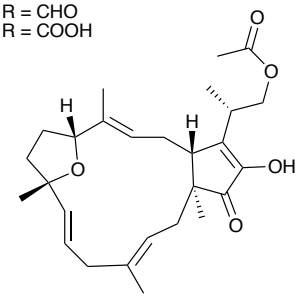


142 R = *α* -CHO
143 R = *β* -CHO



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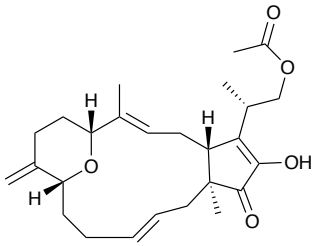

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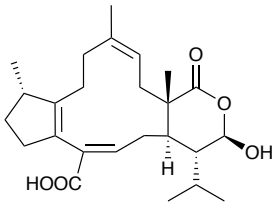

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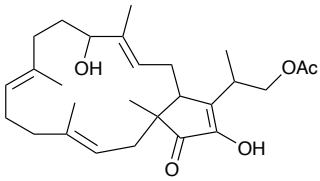

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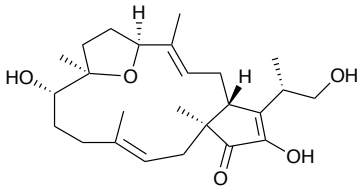

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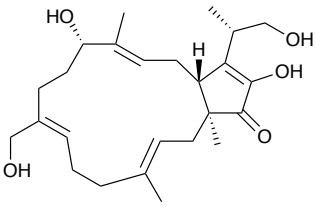

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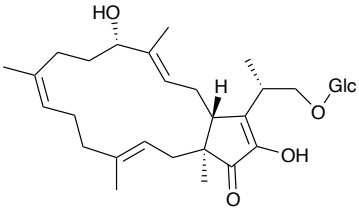

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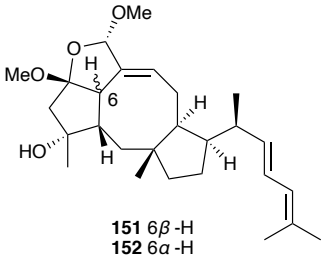
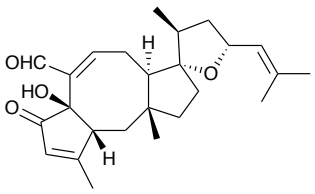


151 6*β* -H
152 6*α* -H



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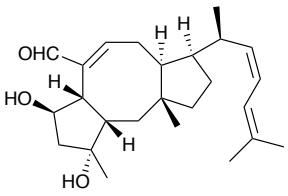

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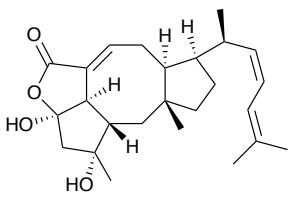

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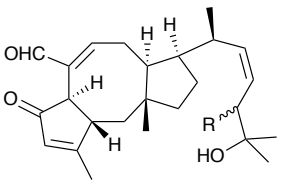
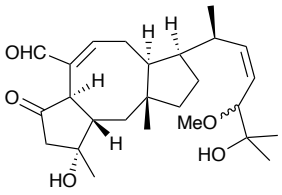


156 R = *α* -OH
157 R = OMe



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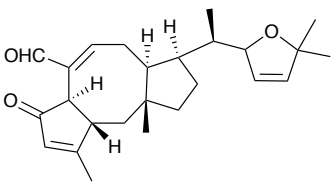

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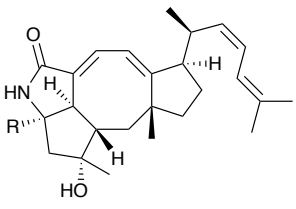
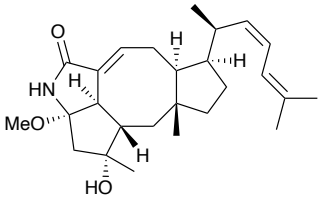


160 R = OCH_3
161 R = OH
162 R = H



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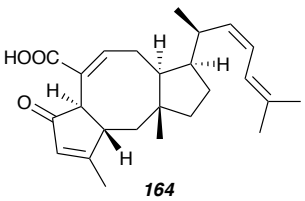
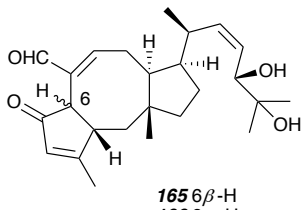
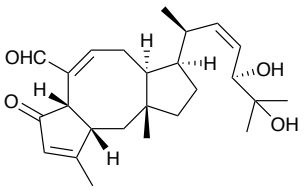


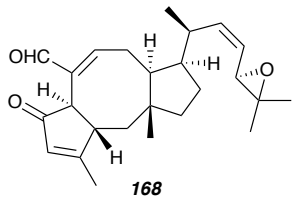
164



165 6β-H
166 6α-H



167



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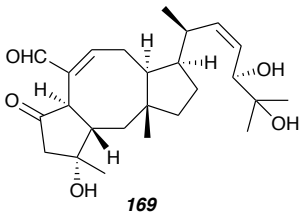

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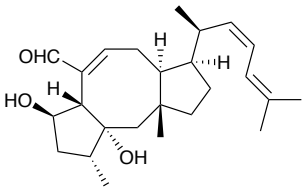

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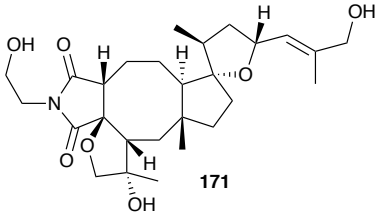

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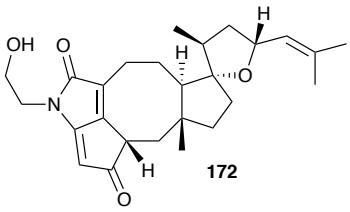
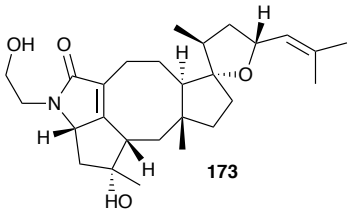
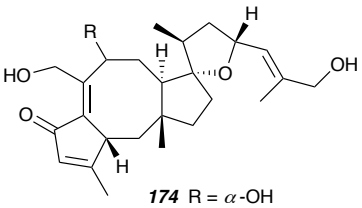


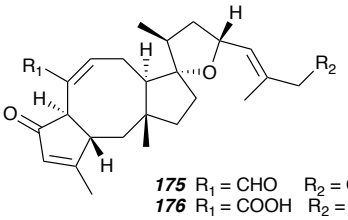
172



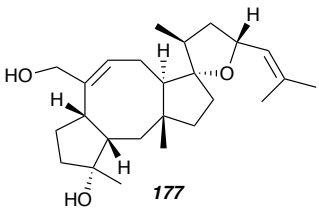
173



174 R = α-OH
178 R = β-OH



175 R_1 = CHO R_2 = OH
176 R_1 = COOH R_2 = H



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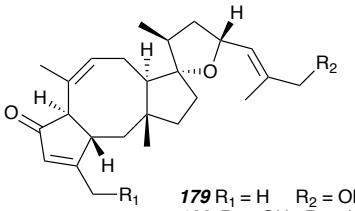
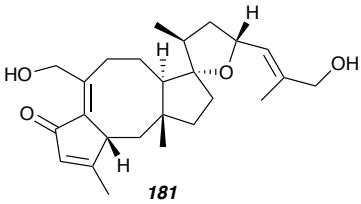


179 R_1 = H R_2 = OH
180 R_1 = OH R_2 = H



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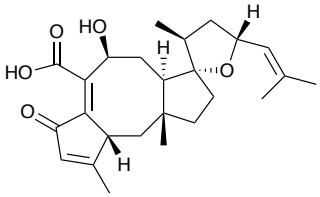

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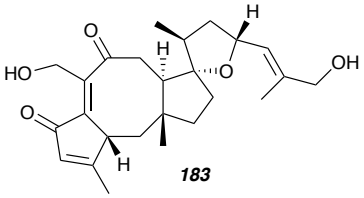

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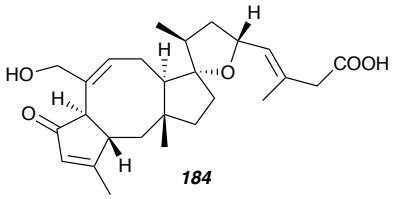

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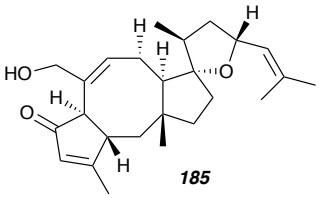

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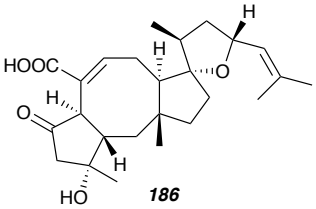

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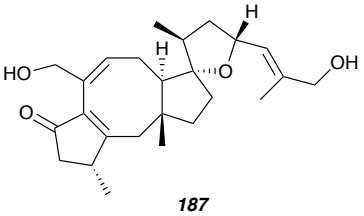

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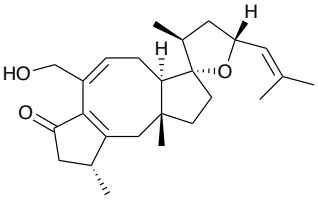

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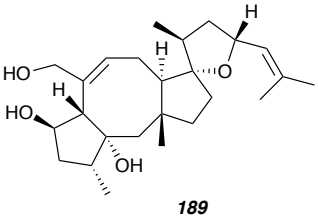

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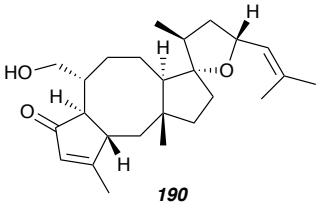
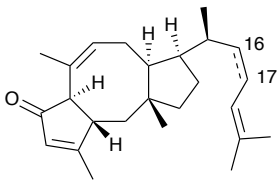
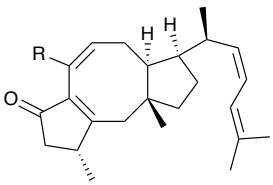


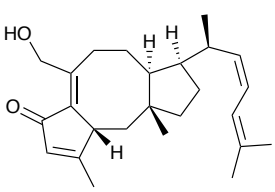
190



191 $\Delta^{16,17}$
192



193 R = CH_2OH
196 R = CHO



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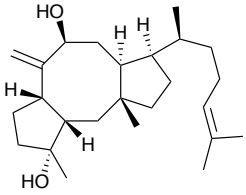
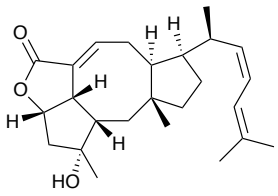


195



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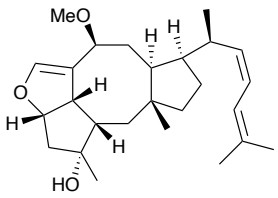
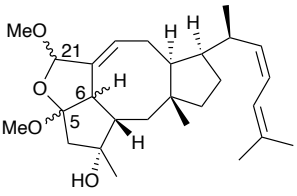
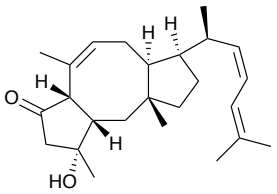


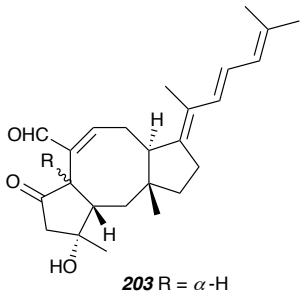
198



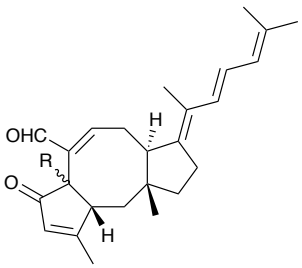
199 5*α*, 6*α*, 21*β*
200 5*α*, 6*α*, 21*α*
201 5*β*, 6*β*, 21*β*



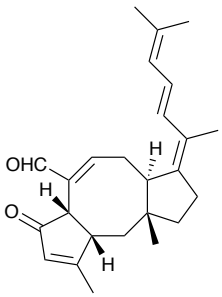
202



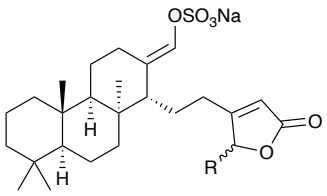
203 R = α-H
204 R = β-H



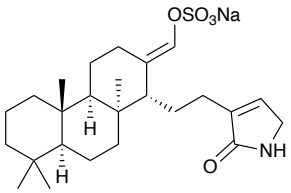
205 R = α-H
206 R = β-H



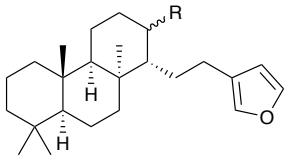
207



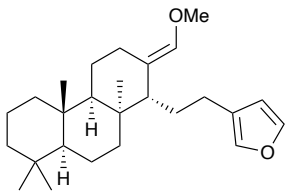
208 R = OH
210 R = OAc



209



211 R = β-CHO
212 R = α-CHO
213 R = β-CH_2OH
214 R = β-COOH
215 R = =O
216 R = α-OH



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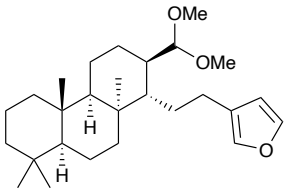
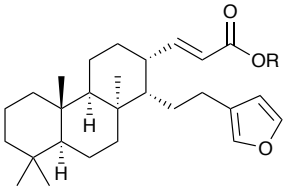
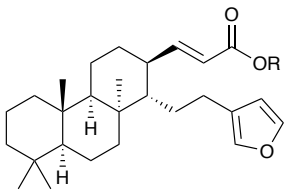


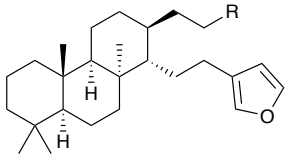
218



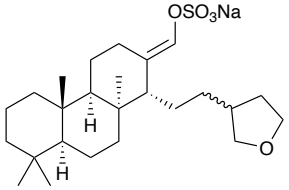
219 R = H
220 R = Et



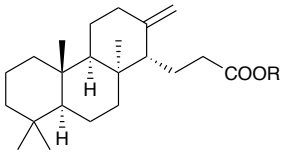
221 R = H
222 R = Et



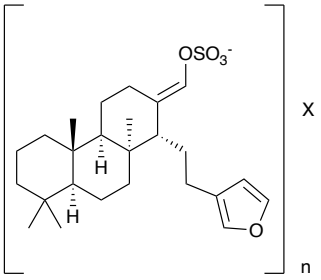
223 R = COOMe
224 R = COOH
225 R = CH_2OH



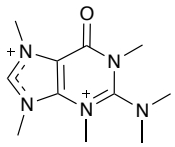
226
227

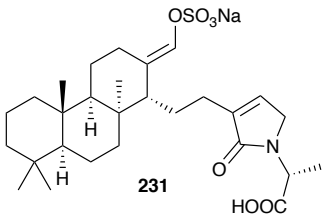


228 R = H
229 R = Me

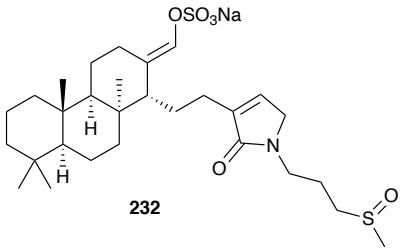


230 n = 2, X =

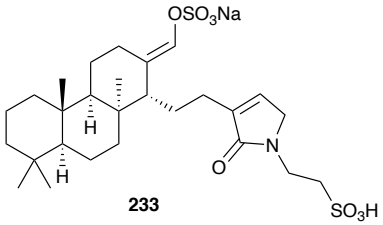




231



232



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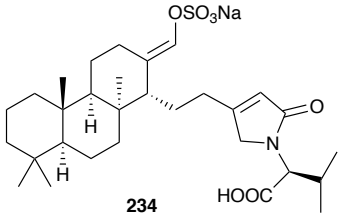

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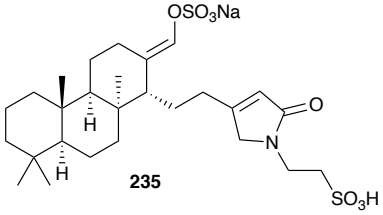
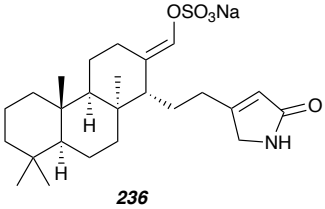


235



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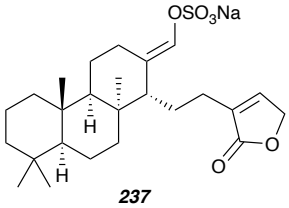

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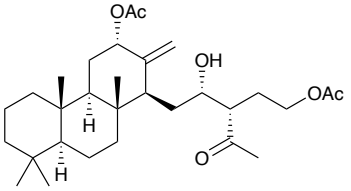
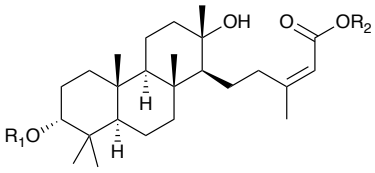
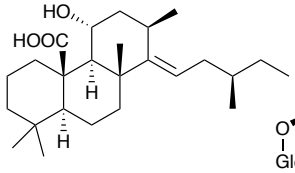


238



239 R_1 = $COCH_2COOH$, R_2 = Me
240 R_1 = $COCH_2COOH$, R_2 = H
241 R_1 = H, R_2 = Me
242 R_1 = H, R_2 = H
243 R_1 = $COCH_2COOMe$, R_2 = Me



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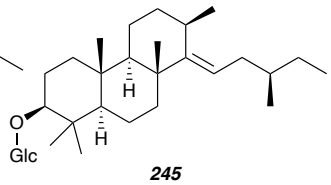
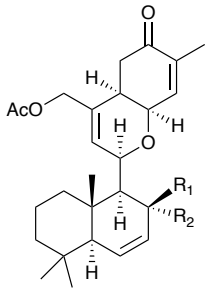
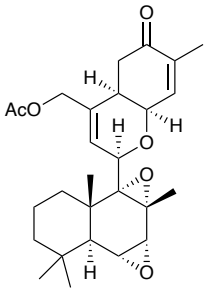


245



246 R_1 = Me, R_2 = OMe
247 R_1 = OH, R_2 = Me



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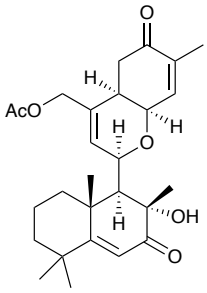
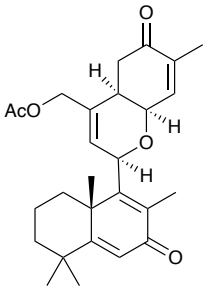
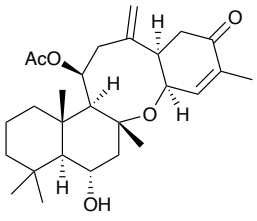


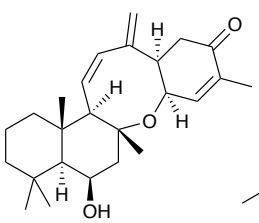
249



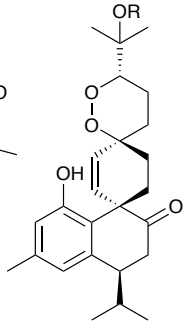
250



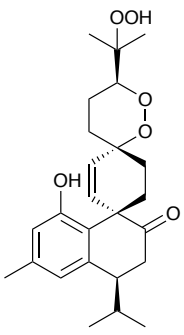
251



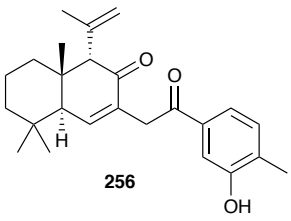
252



253 R = OH
255 R = H



254



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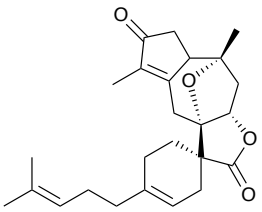
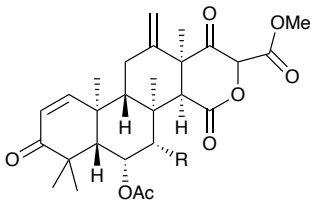
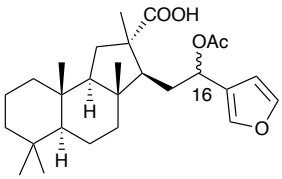


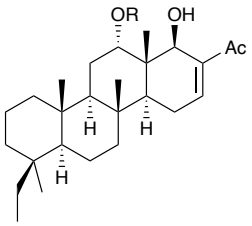
257



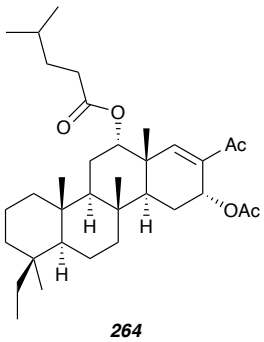
258 R = OH
259 R = H



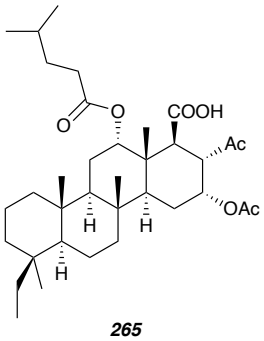
260 16*S*
261 16*R*



262 R = $COCH_2CH_2CH(CH_3)_2$
263 R = $COCH_2CH_2CH_2CH_3$



264



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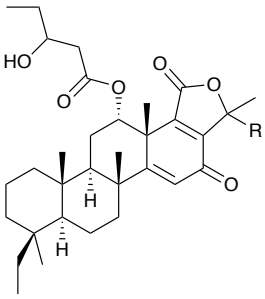
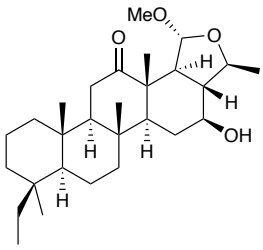


266 R = *α* -OH
268 R = OMe



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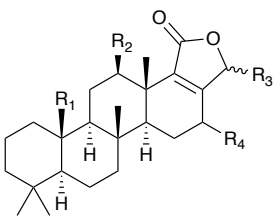
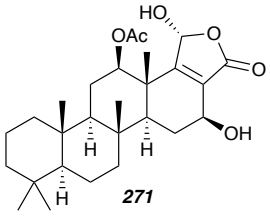


269 R_1 = Et, R_2 = OH, R_3 = *α*-Me, $R_4 = H_2$
270 R_1 = Et, R_2 = OH, R_3 = *β*-Me, $R_4 = H_2$
272 R_1 = Me, R_2 = OAc, R_3 = α-OH, R_4 = *β* -OMe
273 R_1 = Me, R_2 = OAc, $R_3 = H_2$, $R_4 = H_2$
274 R_1 = Me, R_2 = OH, $R_3 = H_2$, $R_4 = H_2$



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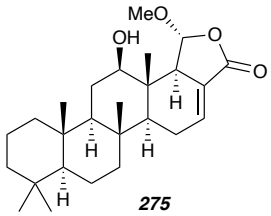

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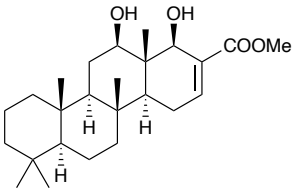

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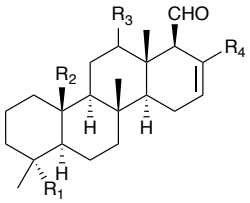
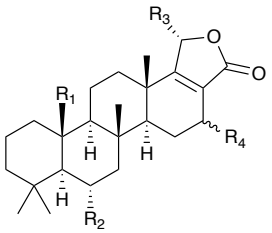
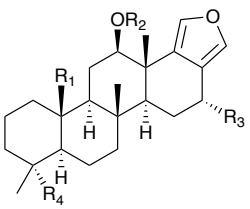


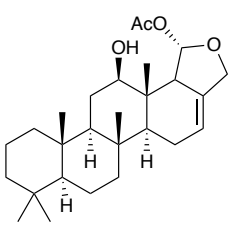
277 R_1 = Me, R_2 = CH_2OH, $R_3 = H_2$, R_4 = CHO
280 R_1 = CH_2OAc, R_2 = Me, R_3 = *β* -OH , R_4 = CHO
282 R_1 = CH_2OAc, R_2 = Me, R_3 = =O, R_4 = CH_2OAc



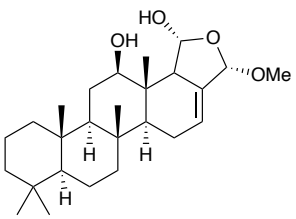
278 R_1 = OH, $R_2 = H_2$, R_3 = OH, R_4 = OH
283 R_1 = OAc, R_2 = OH, $R_3 = R_4 = H_2$
284 R_1 = OAc, R_2 = $OCOCH_2COOH$, $R_3 = R_4 = H_2$



279 R_1 = CH_2OAc, R_2 = Ac, $R_3 = H_2$, R_4 = Me
285 R_1 = Me, R_2 = H, R_3 = OAc, R_4 = Me



281 R_1 = Ac, $R_2 = H_2$



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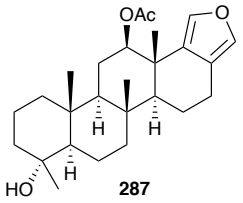

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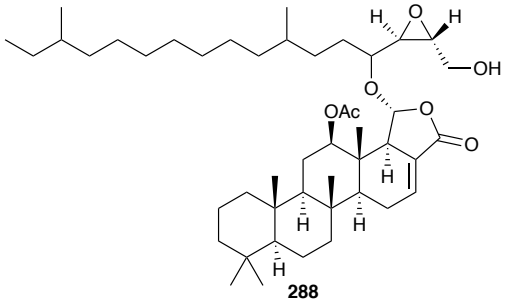

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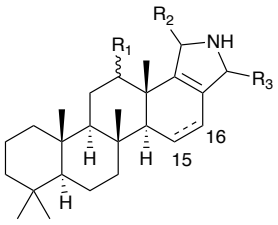
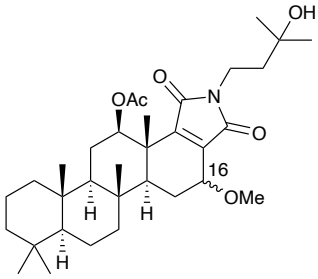
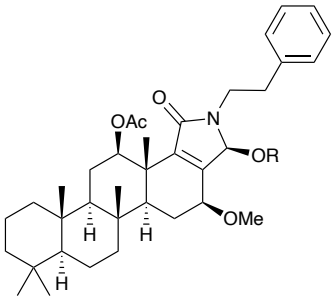


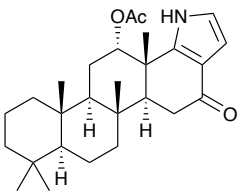
289 R_1 = *α*-OAc, R_2 = =O , R_3 = *α*-OMe, 16*α*-OMe
290 R_1 = *β*-OH , R_2 = R_3 = =O
291 R_1 = *β*-OH , R_2 = H_2, R_3 = =O , $\Delta^{15,16}$
292 R_1 = *β*-OH , R_2 = H_2, R_3 = =O
293 R_1 = *β*-OAc , R_2 = =O , R_3 = *α*-OH, 16*α*-OMe



294 16*S*
295 16*R*



296 R = Me
297 R = H



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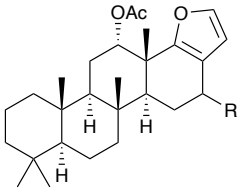
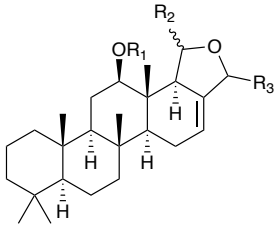
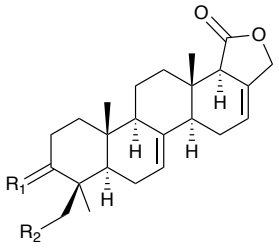


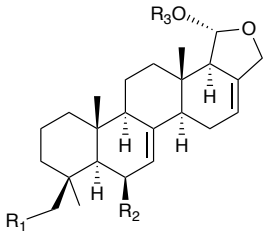
299 R = *α*-OMe
300 R = *β*-OMe



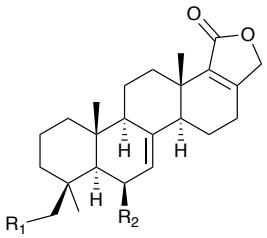
301 R_1 = Me, R_2 = *α*-OAc, R_3 = *β*-OH
302 R_1 = H, R_2 = *β*-OH, R_3 = =O



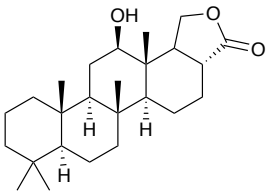
303 R_1 = H_2, R_2 = H
304 R_1 = O, R_2 = H
312 R_1 = H_2, R_2 = OAc



305 R_1 = R_2 = R_3 = H
306 R_1 = OH, R_2 = R_3 = H
307 R_1 = OAc, R_2 = R_3 = H
308 R_1 = R_3 = H, R_2 = OAc



309 R_1 = R_2 = H
310 R_1 = OAc, R_2 = H
311 R_1 = H, R_2 = OAc



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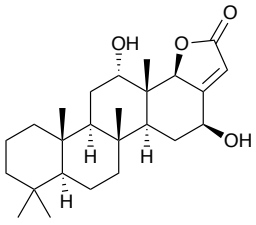

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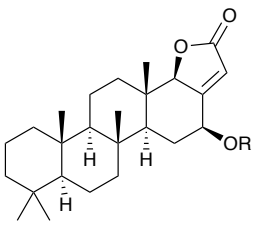
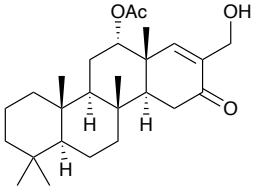


315 R = Ac
316 R = H



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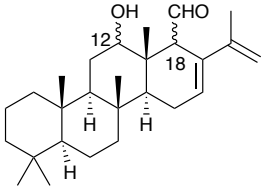
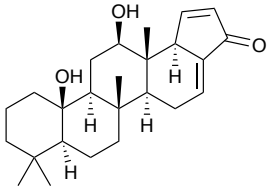


318 12*α*-OH, 18*α*-CHO
319 12*β*-OH, 18*β*-CHO



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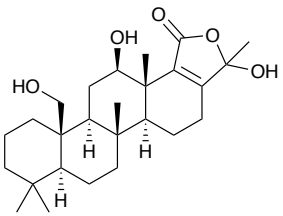

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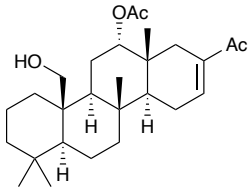

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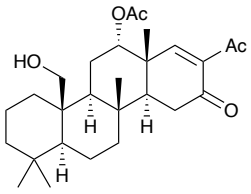

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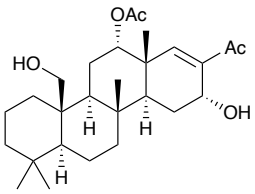

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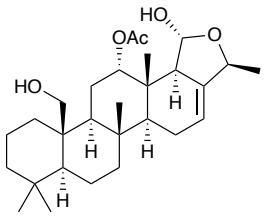

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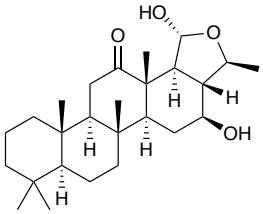

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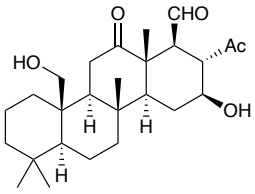

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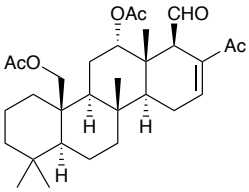

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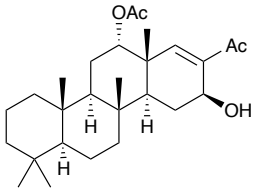

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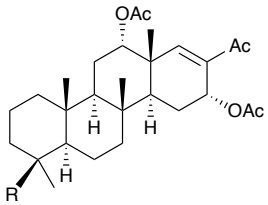
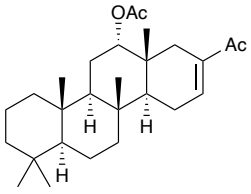


330 R = Me
331 R = Et



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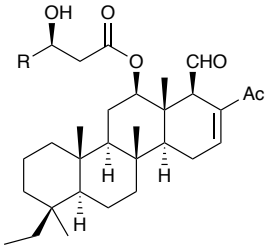
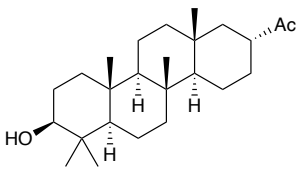


333 R = Me
334 R = Et



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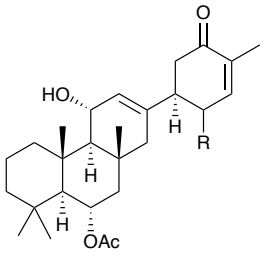
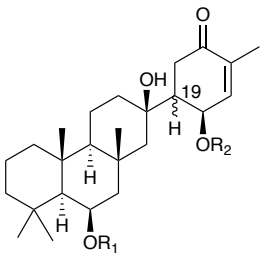
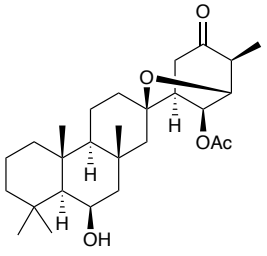


336 R = H
337 R = *S*-OAc



338 R_1 = H, R_2 = Ac, 19α-H
339 R_1 = Ac, R_2 = H, 19β-H



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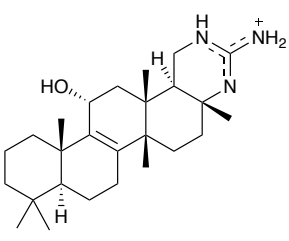

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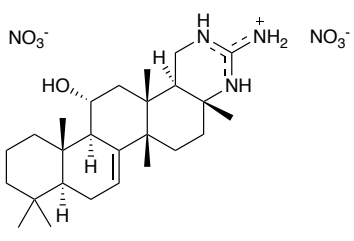

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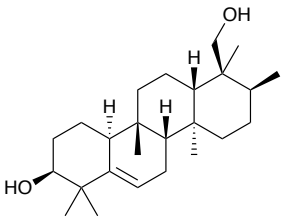

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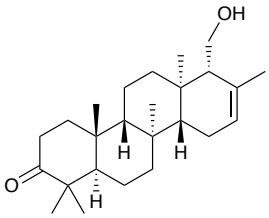

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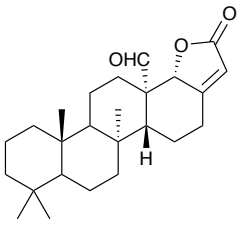

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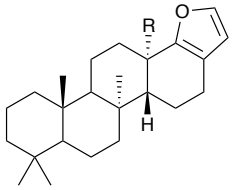
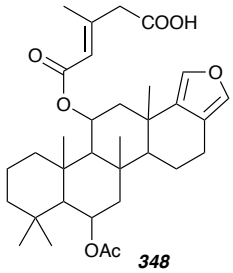
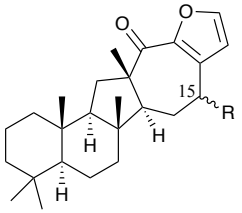


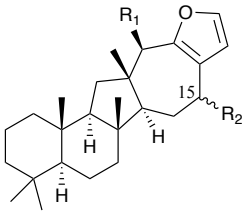
346 R = CHO
347 R = CH_2OH



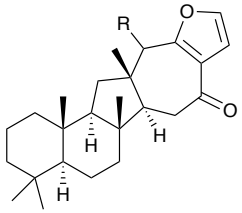
348



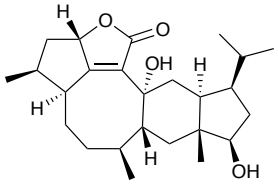
349 R = *S* -OAc
350 R = *R* -OAc
351 R = *S* -OH
352 R = *R* -OH



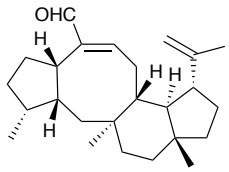
353 R_1 = OAc, R_2 = *S* -OH
354 R_1 = OAc, R_2 = *R* -OH
355 R_1 = OH, R_2 = *S* -OH



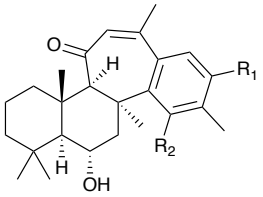
356 R = =O
357 R = *S* -OH
358 R = *R* -OAc
359 R = *R* -OH



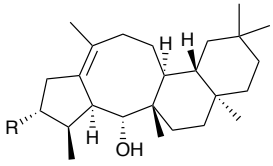
360



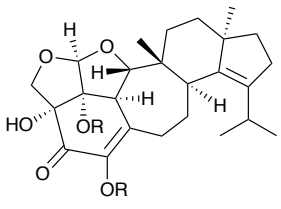
361



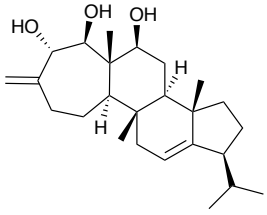
362 R_1 = OH, R_2 = H
363 R_1 = H, R_2 = OH
364 R_1 = H, R_2 = OMe



365 R = H
366 R = OH



367 R = H
368 R = Ac



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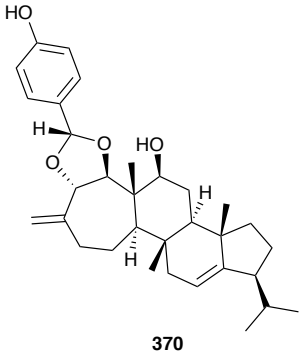

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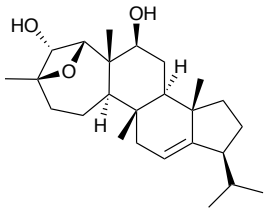

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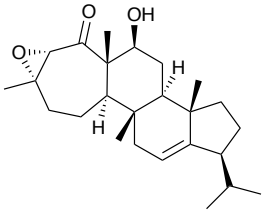

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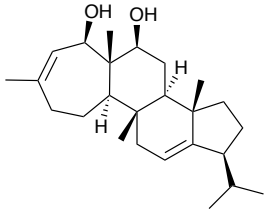

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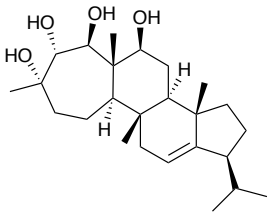

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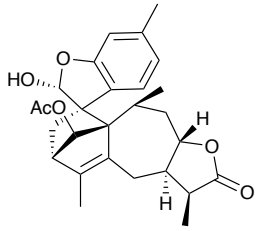

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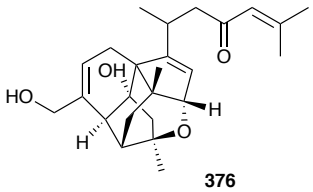

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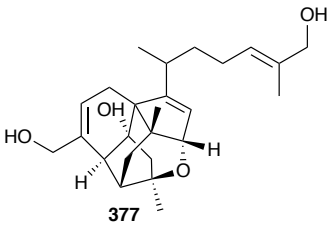

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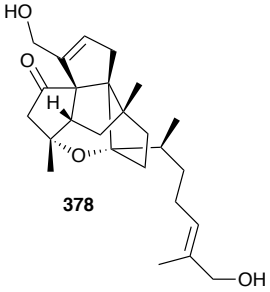

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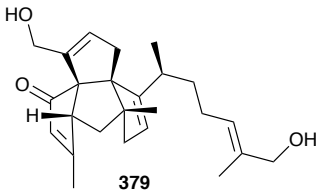

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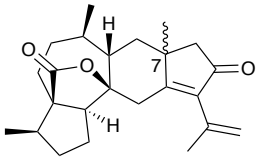
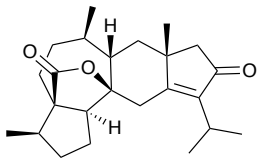


380 7β-Me
381 7α-Me



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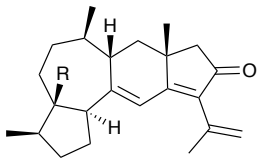
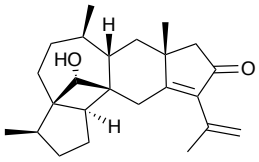
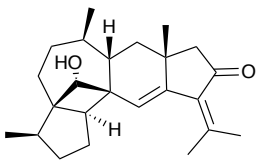


383 R = COOEt
384 R = CHO



385



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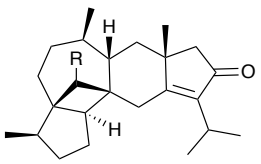
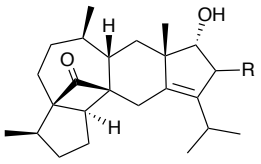
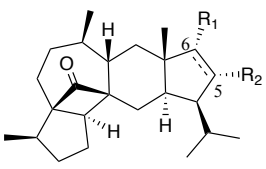


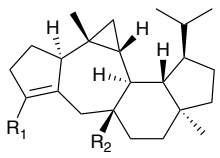
387 R = α-OH
388 R = =O



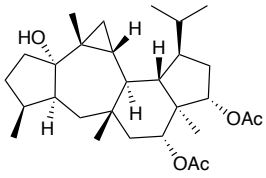
389 R = α-OH
390 R = =O



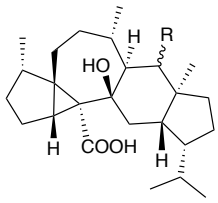
391 $R_1 = R_2$ = OH
392 $\Delta^{5,6}$



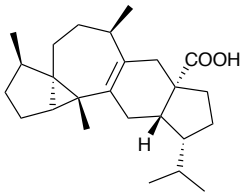
393 R_1 = COOH, R_2 = CH_2OH



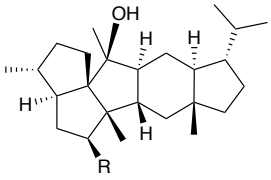
394



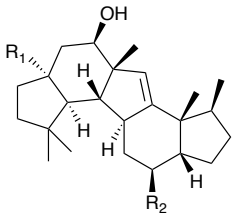
395 R = *S* -OAc
396 R = *R* -OH



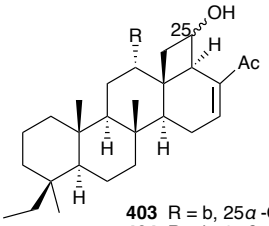
397



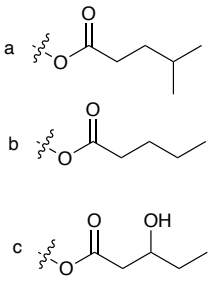
398 R = H
399 R = OH

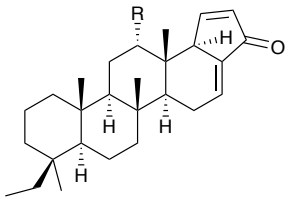


400 R_1 = Me, R_2 = OH
401 R_1 = Me, R_2 = Me
402 R_1 = OH, R_2 = Me

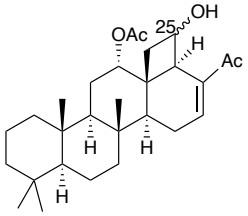


403 R = b, 25*α* -OH
404 R = b, 25*β* -OH
405 R = a, 25*α* -OH
406 R = a, 25*β* -OH

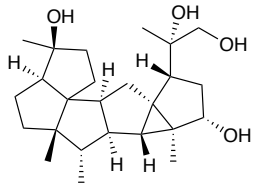




407 R = c



408 25*β* -OH
409 25*α* -OH



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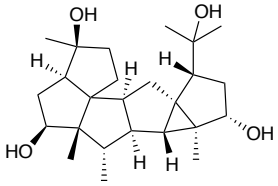

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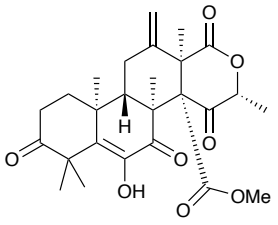

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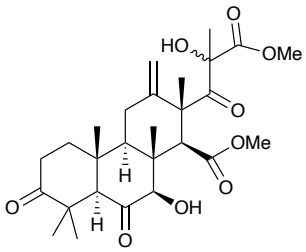

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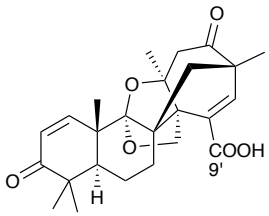

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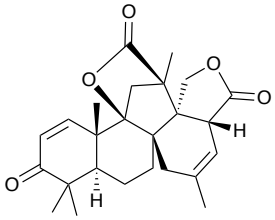

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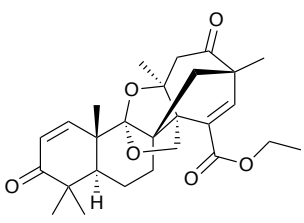

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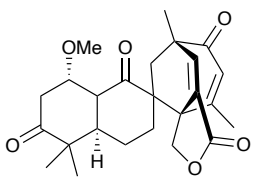

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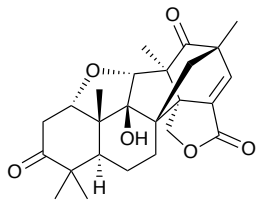

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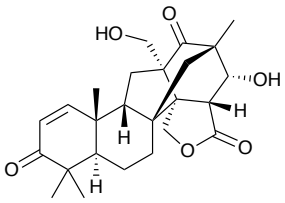

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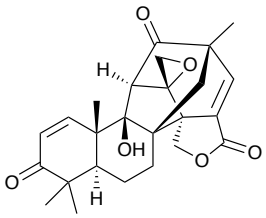

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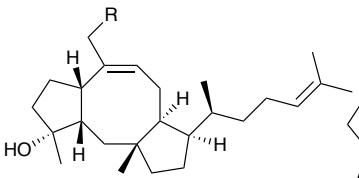
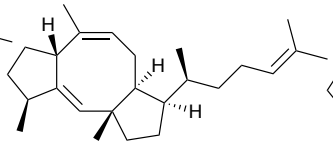


421 R = H
425 R = OH



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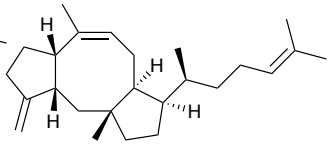

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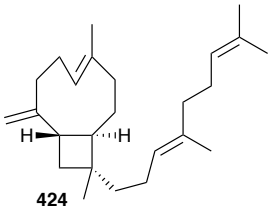

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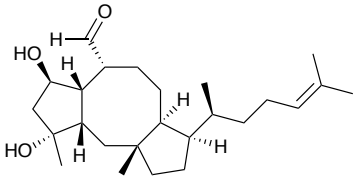

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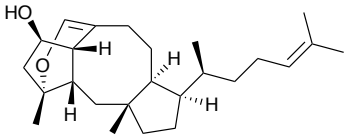

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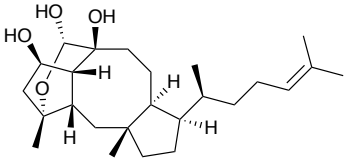

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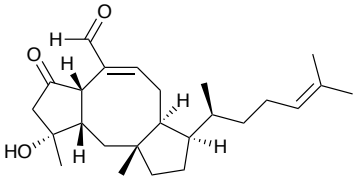

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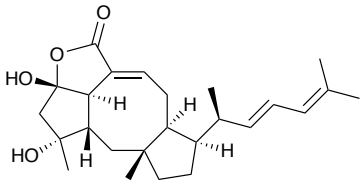

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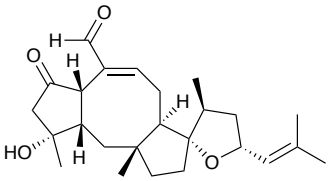

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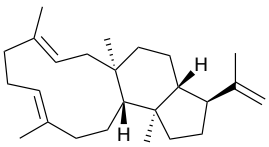

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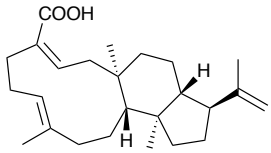

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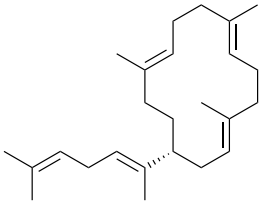

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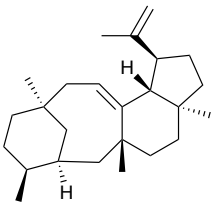

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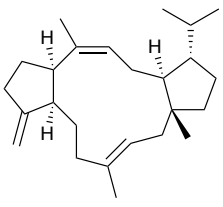

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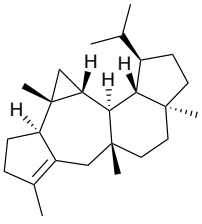

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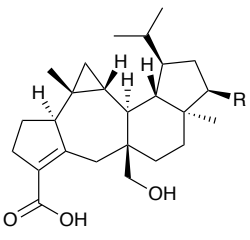
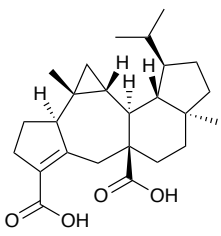


438 R = H
440 R = OH



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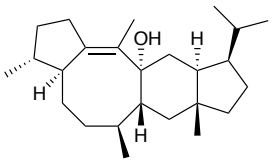

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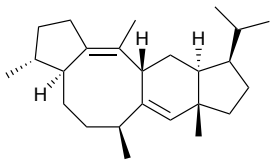

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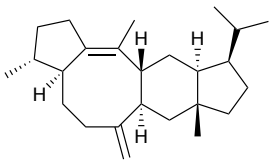

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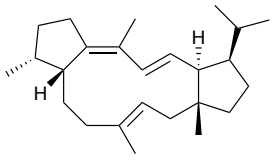

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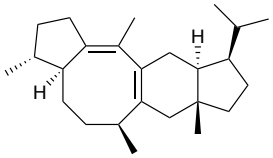

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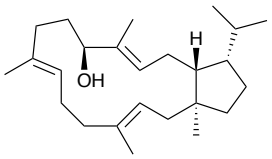

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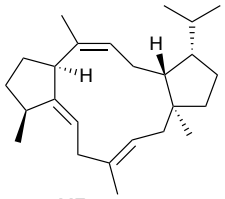

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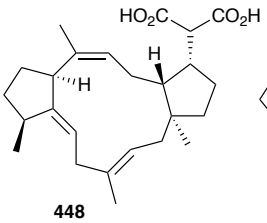

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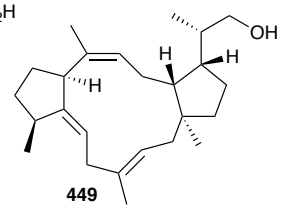

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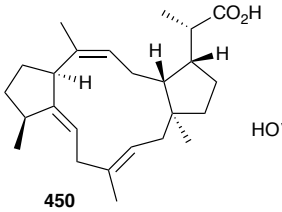

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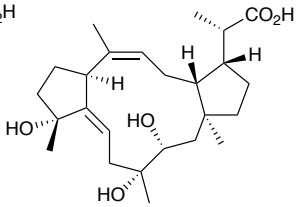

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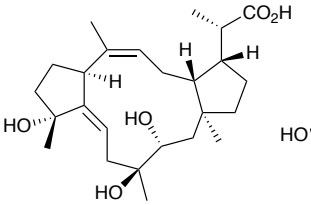

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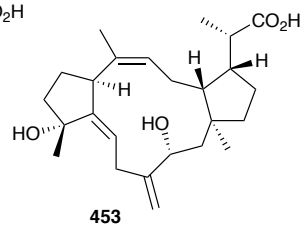

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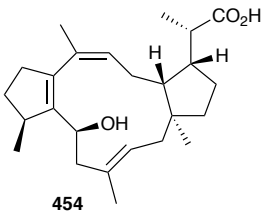

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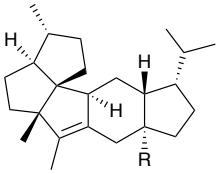
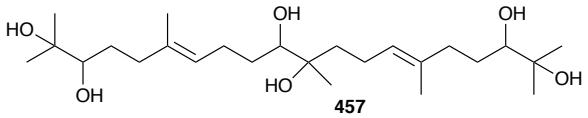


455 R = CH_3
456 R = COOH



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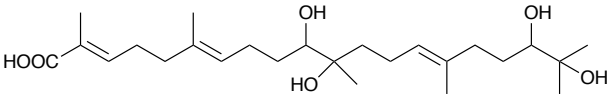

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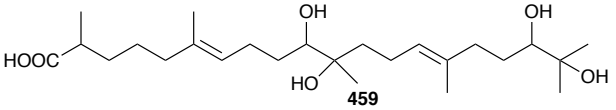

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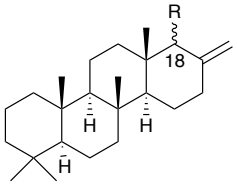
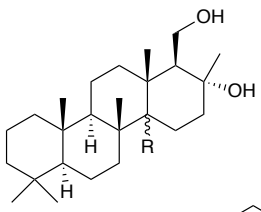
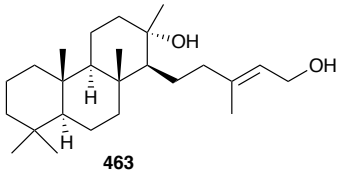


460 R = β-CH_2OH
465 R = α-CH_2OH
471 R = β-CH2OAc



461 R = β-H
462 R = α-H



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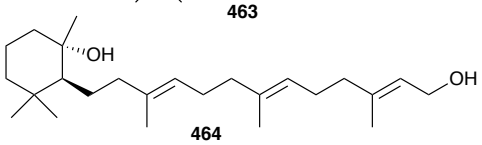
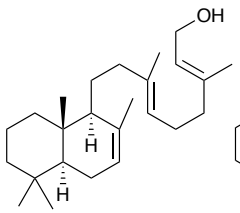


464



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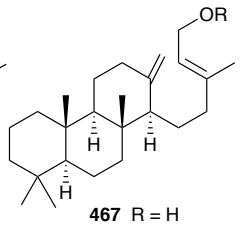
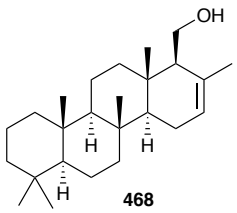


467 R = H
469 R = OAc



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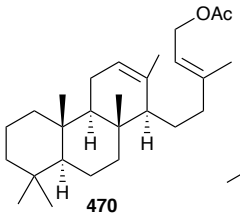

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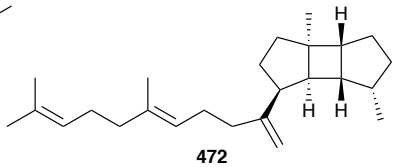

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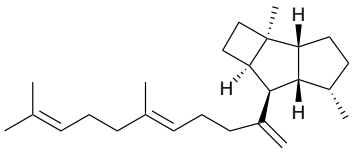

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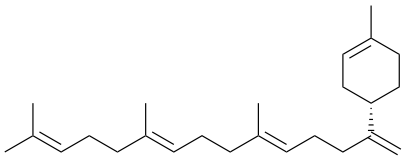

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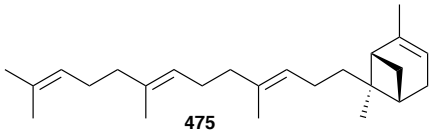
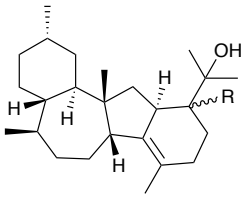
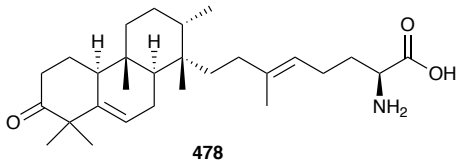


475



476 R = β -H
477 R = α -H



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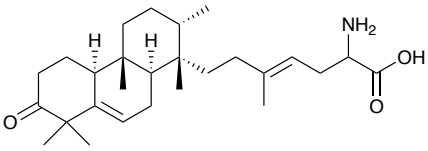

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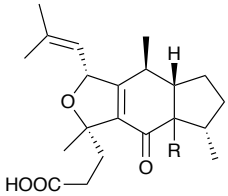
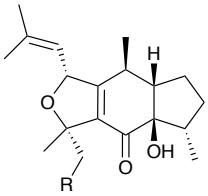
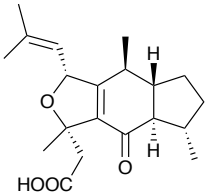


480 R = α -H
481 R = β -OH



482 R = CH_2OH
483 R = CHO



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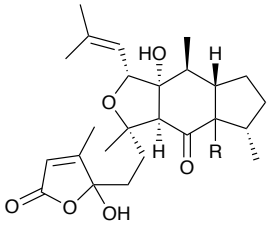
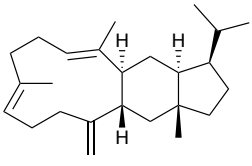


485 R = β -OH
486 R = α -H



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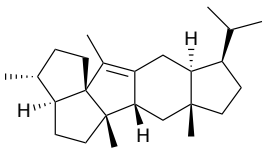

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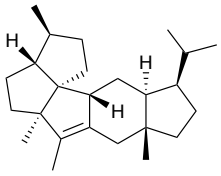

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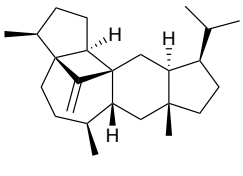

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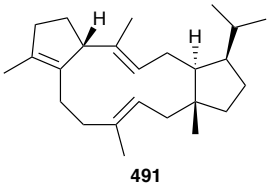

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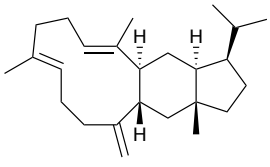

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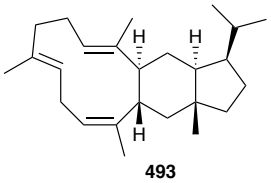

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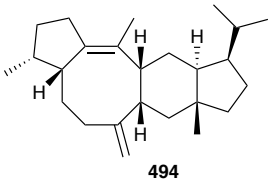

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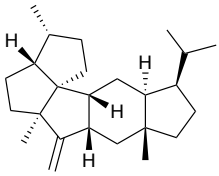

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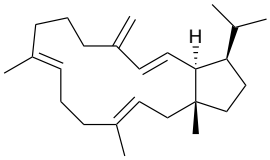

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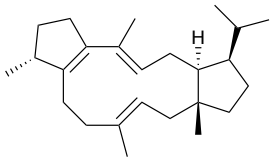

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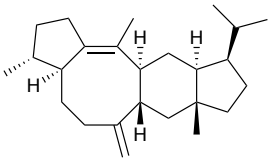

498