> **3.3.1 Salannolactone MF:** C₃₄H₄₄O₁₀, **Mp**:156⁰C UV□max (CHCl₃): 245 nm

IR(KBr)cm⁻¹ 2880,1760,1708,1696,1651,1596,1488,1465,1379,1315,1273,1068,1001,969,880,

646,611

¹**H NMR (CDCl₃)(δ,ppm):** 7.28(d, 1H), 6.95(m, 1H), 5.33 (t, 1H), 4.96(d, 1H) 4.76 (d, 1H) 4.71(d, 2H) 4.21(d, 1H), 3.96(dd, 1H), 3.71(m, 1H), 3.66(d, 1H), 3.58(m, 1H) 3.52(s, 3H), 2.77(d, 1H), 2.68(m, 1H), 2.35(m, 2H), 2.21-2.31(m, 4H), 1.93(s, 3H), 1.87(s, 3H), 1.81(s, 3H), 1.73(s, 3H), 1.28(s, 3H), 1.23(s, 3H), 1.03(s, 3H)

¹³CNMR (CDCl₃) (δ,ppm): 174.16,173.29,170.29, 166.67, 149.02, 144.74,137.23, 135.38,132.51,128.95,87.37,85.68,77.63,72.41,71.47,71.27,70.17,51.58,49.32,48.77,42.66,40.57, 39.95, 39.32, 29.64, 27.38, 20.78,19.61,16.84, 15.02, 14.43,13.09,11.85.

3.3.2 Nimbinlactone

MF: $C_{30}H_{36}O_{10}$, **Mp**:148⁰C **UV** \Box max (CHCl₃): 266 nm

IR (KBr) cm^{-1} :

3580, 3465,2955,2880,1730,1455,1425,1377,1300,1285,1248,1144,1085, 878,790,755

¹**H NMR(CDCl₃)(δ,ppm):** 7.23(d,1H,),6.35(d,1H), 5.87(d,1H),5.40(t,1H),5.21(dd,1H) 4.78(d,2H),4.08(d, 1H),3.73(s,3H),3.71(s,3H), 3.68(m,1H)3.57(t,1H),2.88(m,1H),2.72(m,1H) 2.22(dd, 1H) 2.13(m,1H), 2.04(s,3H),1.99(m,1H),1.73(s,3H),1.36(s,3H),1.35(s,3H),1.29(s,3H)

¹³C NMR(CDCl₃) (δ,ppm): 201.55, 177.88, 174.57, 173.70,170.63,147.97,147.69, 145.45, 134.09, 133.09,125.82,86.73, 84.36, 70.36, 68.53, 53.04,51.76, 50.12,48,12,47.88,41.44,38.88,38.43,34.31,20.89,17.13,16.57,14.05.

3.3.3.Methylangolensatelactone

MF: $C_{27}H_{34}O_8$, **Mp**:116⁰C, **UV** \square max (CHCl₃): 227 nm

 $IR(KBr)cm^{-1}$

2860,2214,1768,1718,1687,1649,1560,1468,1445,1389,1335,1283,1068,

1051,961,887,858,646,611

¹H NMR (CDCl₃)(δ,ppm):

 $\begin{aligned} &7.55(d,1H), &5.63(s,1H), &5.15(s,2H), &4.88(d,2H), &3.70(s,3H), &3.46(dd,1H), &2.94(m,1H), &2.89(m,1H), &2.89(m,1H), &2.56(m,1H), &2.25(m,2H), &2.18(m,1H), &2.16(m,1H), &1.28(m,1H), &1.21(m,1H), &1.17(s,3H), &1.14(m,1H), &1.08(s,3H), &0.90(s,3H), &0.86(s,3H). \end{aligned}$

¹³CNMR (CDCl₃) (δ,ppm):

212.7,173.5,171.4,169.5,150.7,145.3,130.5,111.7,79.5,78.1,77.6,70.4,51.9,49.3,47.8,43.9,42.8,39 .5,33.6,32.8,28.8,26.5,23.3,21.4,21.2,13.5.

3.3.4 Azadiradionelactone

MF: $C_{28}H_{34}O_{6}$, **Mp**: 198⁰C, **UV** \square max (CHCl₃): 245 nm

IR (KBr) cm^{-1} :

2987,2252,1737,1666,1596,1459,1368,1240,1081,905,827,724,647.

¹H NMR (CDCl₃)(δ,ppm):

7.57(t,1H),7.15(d,1H),5.88(d,1H),5.69(s,1H),4.92(t,1H),4.72(s,2H),3.05(s,1H)2.41(t,2H),2.25(m, 2H),2.18(m,3H), 2.00(t,1H),1.95(m,2H),1.75(t,1H),1.35(m,3H),1.25(m,3H),1.18(m,3H),1.07(m,3H),0.95(m,3H).

¹³CNMR (CDCl₃) (δ,ppm:

203.8,195.9,193.3,174.3,169.4,156.7,146.6,128.4,124.0,122.5,73.6,71.0,59.3,47.8,44.7,46.0,43.9, 39.9,37.8,30.3,26.8,26.4,26.1,23.3,21.1,20.8,18.9, 15.7









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