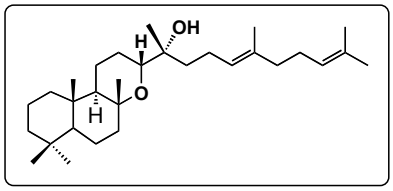
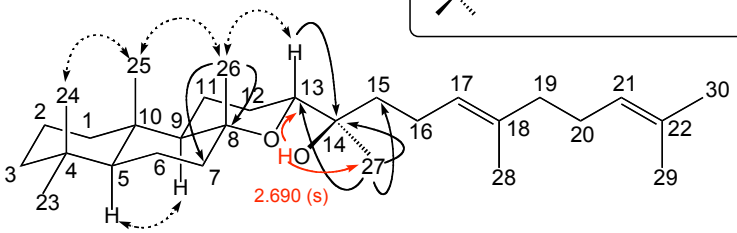
Product **25** (oil) from (10*R*,11*R*)-10,11-DihydroxySQ



$[\alpha]_D^{25}$ = - 12.9
(*c* = 0.458,$CHCl_3$)

HRFABMS (glycerol)
M+H, Found: 445.4070
Calcd: 445.4046

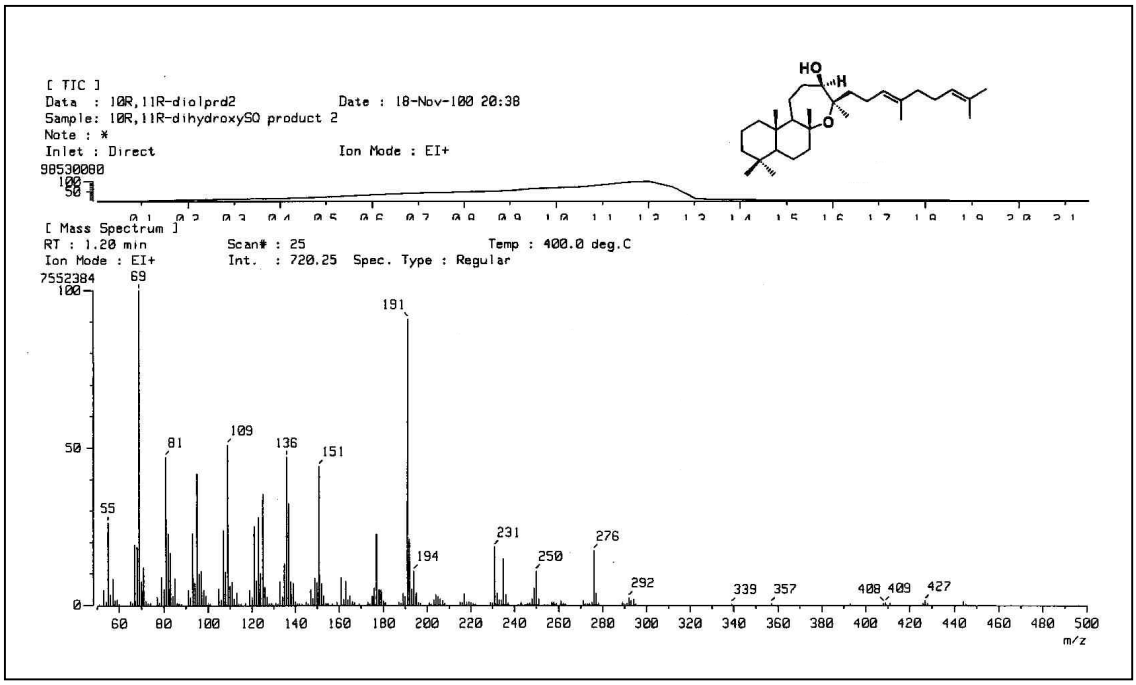
HMBC
NOE



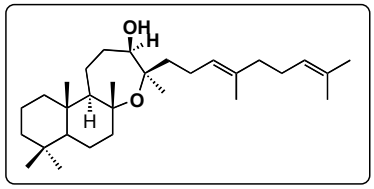
NMR data in C_6D_6, solvent peak : ^1H; 7.28 ppm , ^{13}C; 128.0 ppm

NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C
1	0.78 (ddd, 12.8,12.8,3.2 Hz) ; 1.55(m)	**39.08**	9	1.14(bd, 12.0Hz)	**57.52**	17	5.50 (t, 6.6Hz)	**125.68**	25	0.738 (3H, s)	**15.67**
2	1.48 (m); 1.67(m)	**18.91**	10	—	**36.79**	18	—	**134.72**	26	1.211 (3H, s)	**20.80**
3	1.22(m) ; 1.46(m)	**42.34**	11	1.25(m); 1.60(m)	**18.34**	19	2.24 (2H, t, 7.2Hz)	**40.24**	27	1.329 (3H, s)	**21.80**
4	—	**33.33**	12	1.49(m) ; 1.62(m)	**27.09**	20	2.32(2H, t, 7.2Hz)	**27.22**	28	1.818 (3H,s)	**16.10**
5	0.90(m)	**56.24**	13	3.52(dd,11.6, 2.4Hz)	**74.51**	21	5.38 (t, 6.8Hz)	**125.00**	29	1.694 (3H, s)	**17.73**
6	1.27(m) ; 1.63(m)	**20.11**	14	—	**73.04**	22	—	**131.08**	30	1.811 (3H, s)	**25.85**
7	1.51(m) ; 1.80(m)	**42.06**	15	1.81 (2H,m)	**39.76**	23	0.956 (3H,s)	**33.46**	OH	2.690 (s)	
8	—	**74.91**	16	2.48 (2H,m)	**22.77**	24	0.888 (3H, s)	**21.46**			

Product 26



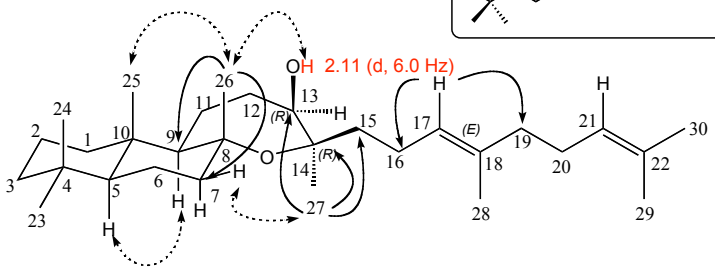
Product **26** (oil) from (10*R*,11*R*)-10,11-DihydroxySQ in C_6D_6



$[\alpha]_D^{25} = -22.9$
(c = 0.142,in $CHCl_3$)

Major HMBC
Major NOE
COSY: H13-H12, H-12-H11

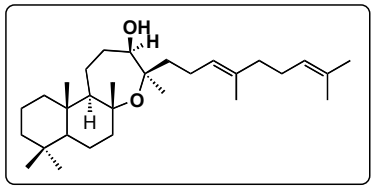
HRFABMS (glycerol)
M+H, Found: 445.4113
Calcd: 445.4046



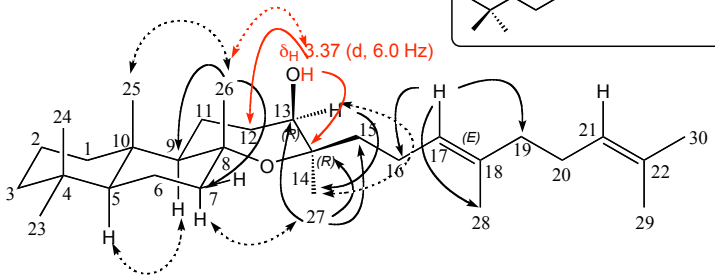
NMR data in C_6D_6, solvent peak : ^1H; 7.28 ppm , ^{13}C; 128.0 ppm

NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C
1	0.84(m) ; 1.79(m)	**40.43**	9	1.61(m)	**59.88**	17	5.51 (t, 7.0Hz)	**125.69**	25	0.791 (3H,s)	**16.14**
2	1.47(m); 1.64(m)	**19.11**	10	—	**39.39**	18	—	**134.62**	26	1.357 (3H,s)	**24.69**
3	1.21(m); 1.44(m)	**42.25**	11	1.51(m) ; 1.74(m)	**17.39**	19	2.26 (2H,t, 6.8Hz)	**40.24**	27	1.357 (3H,s)	**24.20**
4	—	**33.50**	12	1.65(m) ; 2.00(m)	**32.97**	20	2.33 (2H,t, 6.8Hz)	**27.26**	28	1.845 (3H, s)	**16.16**
5	0.87(m)	**56.64**	13	3.62 (t, 6.0Hz)	**74.73**	21	5.39 (t, 6.8Hz)	**125.01**	29	1.704 (3H, s)	**17.75**
6	1.23(m) ; 1.68(m)	**21.48**	14	—	**80.73**	22	—	**131.11**	30	1.813 (3H, s)	**25.85**
7	1.72(m) ; 1.98(m)	**44.00**	15	1.59(m) ; 2.16(dd,13.2, 13.2, 4.8 Hz)	**41.71**	23	0.958 (3H,s)	**33.55**	OH	2.109 (1H, d, 6.0 Hz)	
8	—	**80.44**	16	2.31(m) ; 2.41(m)	**23.21**	24	0.866 (3H, s)	**21.50**			

Product **26** (oil) from (10*R*,11*R*)-10,11-DihydroxySQ in acetone-d_6



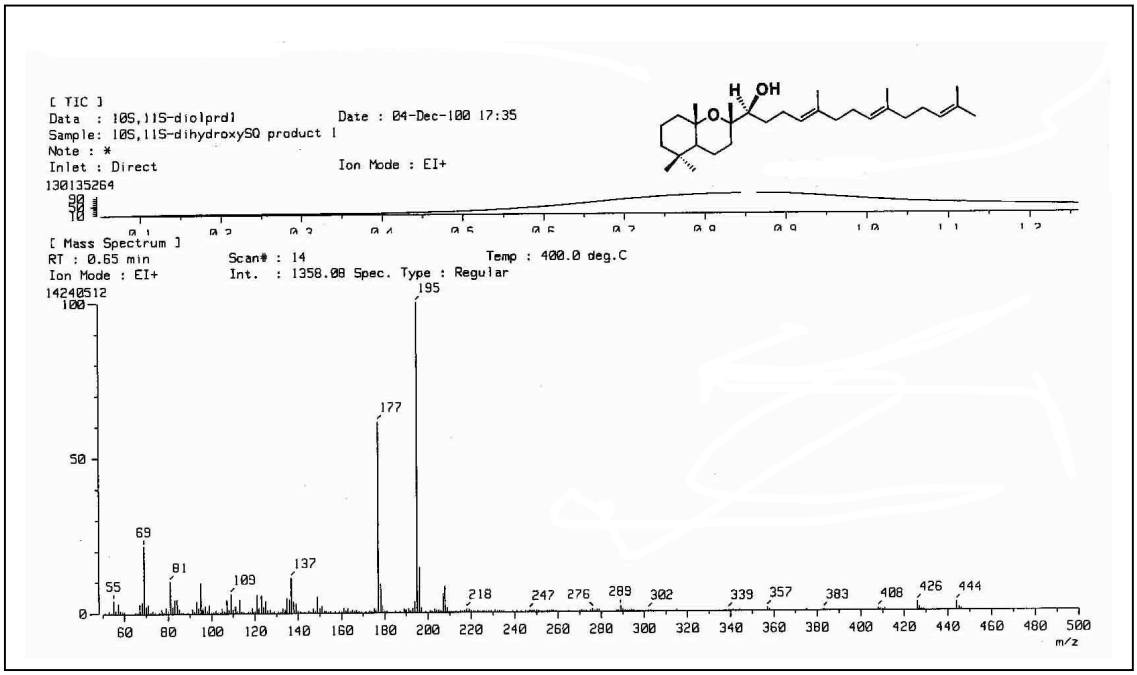
Major HMBC
Major NOE
COSY: H13/H12, H12/H11



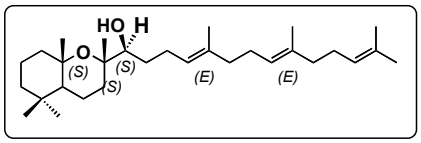
NMR data in acetone d_6, solvent peak : ^1H; 2.04 ppm , ^{13}C; 29.80 ppm

NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C
1	0.92(m) ; 1.83(m)	**40.95**	9	1.38 (m)	**62.17**	17	5.16 (t, 6.8 Hz)	**125.20**	25	0.807 (3H,s)	**16.26**
2	1.42(m) ; 1.65(m)	**19.50**	10	—	**39.49**	18	—	**134.59**	26	1.336 (3H,s)	**23.53**
3	1.16(m); 1.35(m)	**42.68**	11	1.47(m); 1.72(m)	**19.11**	19	1.96 (2H,t, 6.8Hz)	**40.48**	27	1.202 (3H,s)	**26.99**
4	—	**33.97**	12	1.69(m) ; 1.85(m)	**32.68**	20	2.33 (2H,t, 7.2 Hz)	**27.45**	28	1.616 (3H, s)	**16.06**
5	0.91(m)	**57.08**	13	3.67 (t, 6.0 Hz)	**75.59**	21	5.10 (bt, 6.8Hz)	**126.34**	29	1.582 (3H, s)	**17.71**
6	1.27(ddd,12.4,12.4,3.2 Hz) ; 1.62(m)	**21.47**	14	—	**81.33**	22	—	**131.56**	30	1.645 (3H, s)	**25.82**
7	1.57(m) ; 1.77(m)	**45.30**	15	1.35(m) ; 1.83(m)	**40.20**	23	0.880 (3H,s)	**33.79**	OH	3.37 (d, 6.0 Hz)	
8	—	**80.28**	16	2.02 (m) ; 2.08(m)	**23.31**	24	0.794 (3H, s)	**21.79**			

Product 27

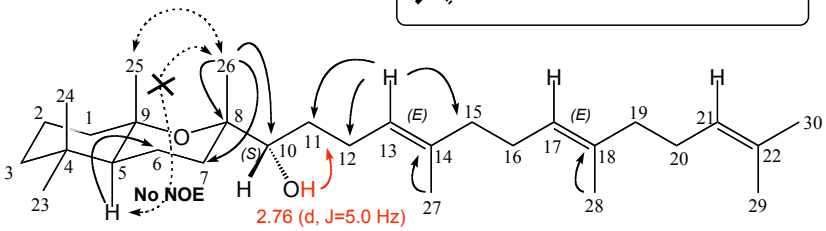


Product **27** (oil) from (10*S*,11*S*)-10,11-DihydroxySQ



$[\alpha]_D^{25} = -9.01$
(c 0.233, $CHCl_3$)

HRFABMS(glycerol)
M+H, Found: 445.4120
Calcd: 445.4046



Major HMBC
Major NOE

COSY cross peak of OH with H-10 and H-11

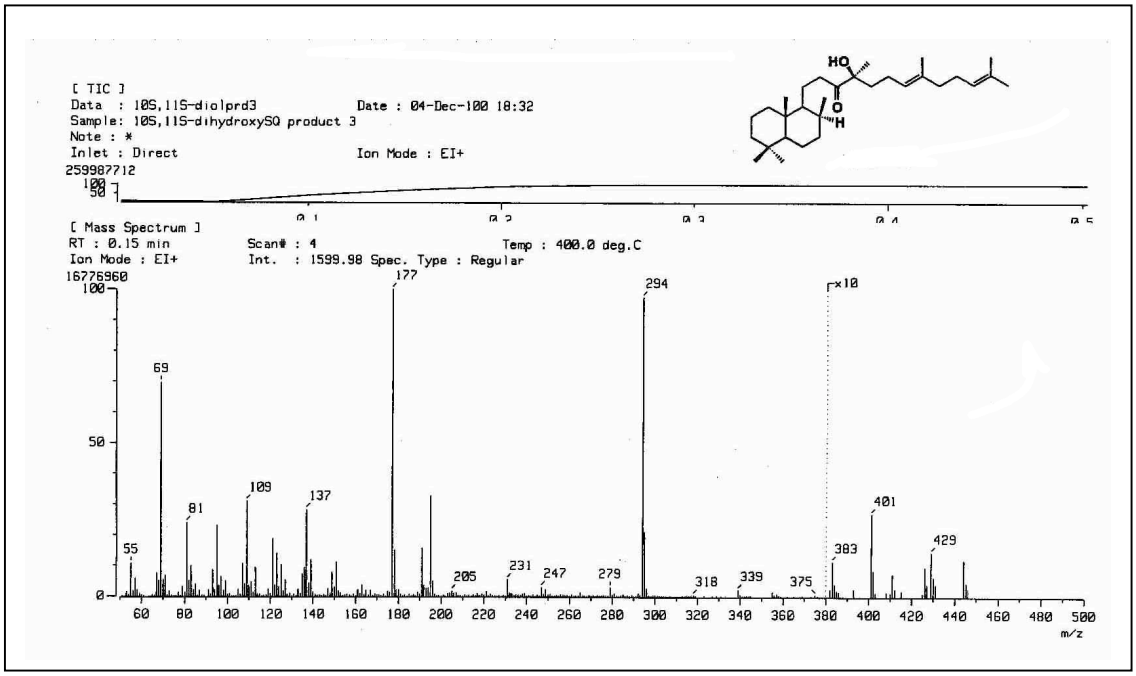
Selected COSY 45; H10-H11, H11-H12, H12-H13

NMR data in C_6D_6, solvent peak : ^1H; 7.28 ppm , ^{13}C; 128.0 ppm

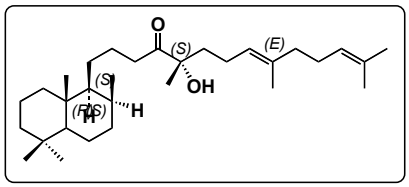
NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C
1	1.34(m) ; 1.71(m)	**41.92**	9	—	**75.11**	17	5.42 (t, 6.8Hz)	**124.91**	25	1.274 (3H, s)	**23.54**
2	1.48 (2H,m)	**20.26**	10	3.43(ddd, 10.4, 5.0,2.0Hz)	**79.63**	18	—	**134.86**	26	1.255 (3H, s)	**22.39**
3	1.198(m) ; 1.33(m)	**41.62**	11	1.59(m) ; 1.71(m)	**31.28**	19	2.21 (2H,m)	**40.26***	27	1.826 (3H, s)	**16.19**
4	—	**33.39**	12	2.49(m) ; 2.69(m)	**25.62**	20	2.30 (2H,m)	**27.23****	28	1.725 (3H, s)	**16.11**
5	1.16 (dd,12.0, 2.0Hz)	**54.37**	13	5.53 (t, 6.8Hz)	**125.34**	21	5.37 (t, 7.0Hz)	**124.97**	29	1.690 (3H, s)	**17.73**
6	1.40 (m) ; 1.50(m)	**16.34**	14	—	**135.27**	22	—	**131.05**	30	1.806 (3H, s)	**25.84**
7	1.46(m) ; 1.74(m)	**34.83**	15	2.25 (2H,m)	**40.21***	23	0.910 (3H, s)	**32.20**	OH 2.76 (d, J=5.0 Hz)		
8	—	**75.73**	16	2.33 (2H,m)	**27.11****	24	0.768 (3H, s)	**20.87**			

The signals of C15 and C19 and those of C16 and C19 are interchangeable due to the close values

Product 28

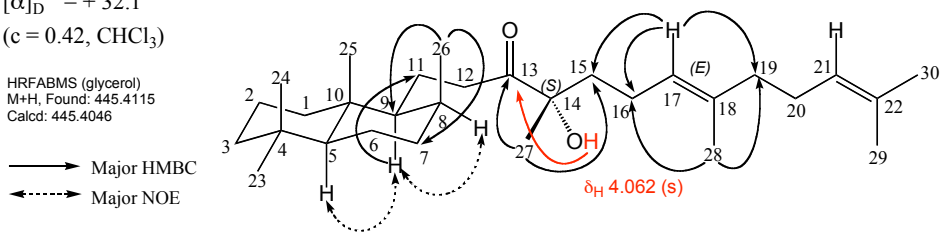


Product **28** (oil) from (10*S*,11*S*)-10,11-DihydroxySQ



$[\alpha]_D^{25} = +32.1$
(c = 0.42, $CHCl_3$)

HRFABMS (glycerol)
M+H, Found: 445.4115
Calcd: 445.4046



NMR data in C_6D_6, solvent peak : ^1H; 7.28 ppm , ^{13}C; 128.0 ppm

NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C	NO.	^1H	^{13}C
1	0.91(m); 1.79(m)	**39.68**	9	1.10 (m)	**52.95**	17	5.32(t,6.6 Hz)	**124.07**	25	0.951 (3H, s)	**16.44**
2	1.48(m) ; 1.65(m)	**18.76**	10	—	**38.71**	18	—	**135.87**	26	0.990 (3H, d,7.2Hz)	**15.43**
3	1.26(dd, 12.4, 3.2Hz ; 1.49(m)	**42.35**	11	1.64(m) ; 2.09(m)	**20.44**	19	2.18 (2H, t, 6.8Hz)	**40.15**	27	1.322 (3H, s)	**25.78***
4	—	**33.44**	12	2.25 (m) ; 2.46(m)	**34.38**	20	2.27 (2H, m)	**27.07**	28	1.703 (3H, s)	**16.02**
5	0.90(dd, 12.8, 3.0Hz)	**56.86**	13	—	**214.19**	21	5.35(t, 6.8Hz)	**124.77**	29	1.689 (3H, s)	**17.71**
6	1.44(m) ; 1.59 (m)	**17.75**	14	—	**78.60**	22	—	**131.25**	30	1.806 (3H, s)	**25.82***
7	1.60(m) ; 1.73(m)	**34.98**	15	1.81 (2H, m)	**40.03**	23	1.013 (3H, s)	**33.71**	OH 4.062 (s)		
8	1.875 (m)	**29.79**	16	2.08 (m); 2.40(m)	**22.69**	24	0.951 (3H, s)	**21.78**			

*The carbon signals of C27 and C30 are exchaneable