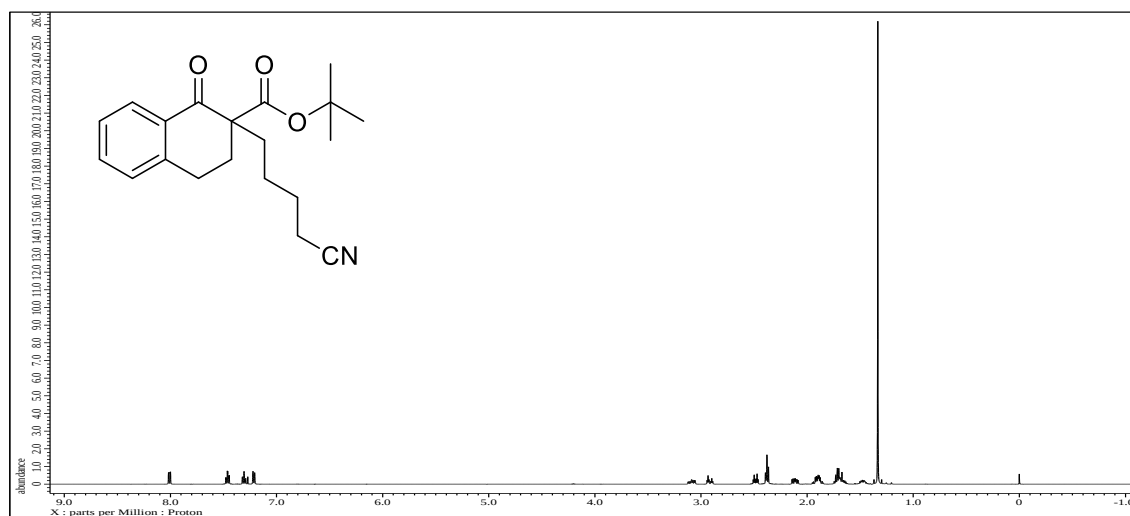
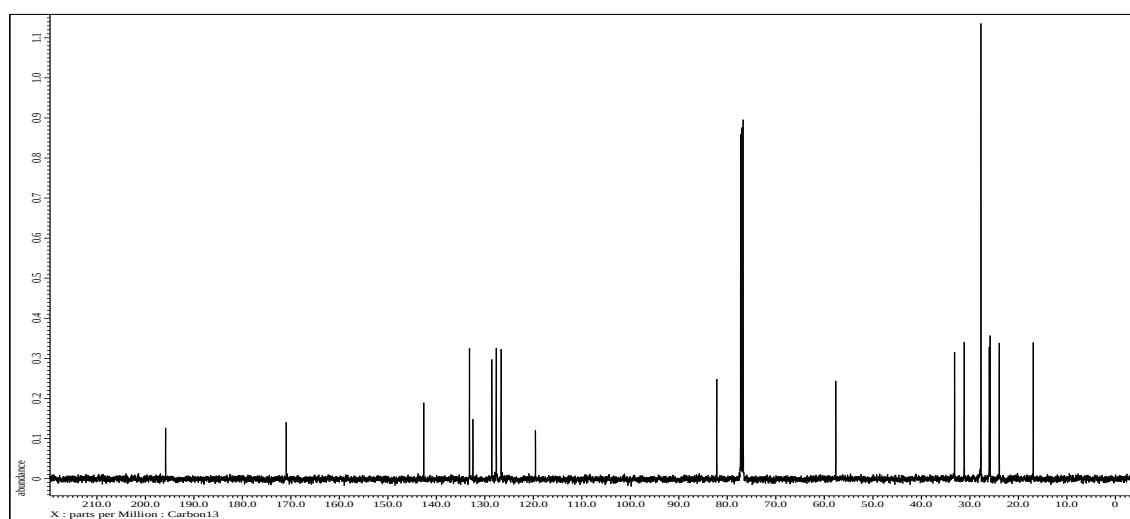


***tert*-Butyl 2-(2-cyanobutyl)-1-oxo-1,2,3,4-tetrahydronaphthalene-2-carboxylate**

¹H NMR

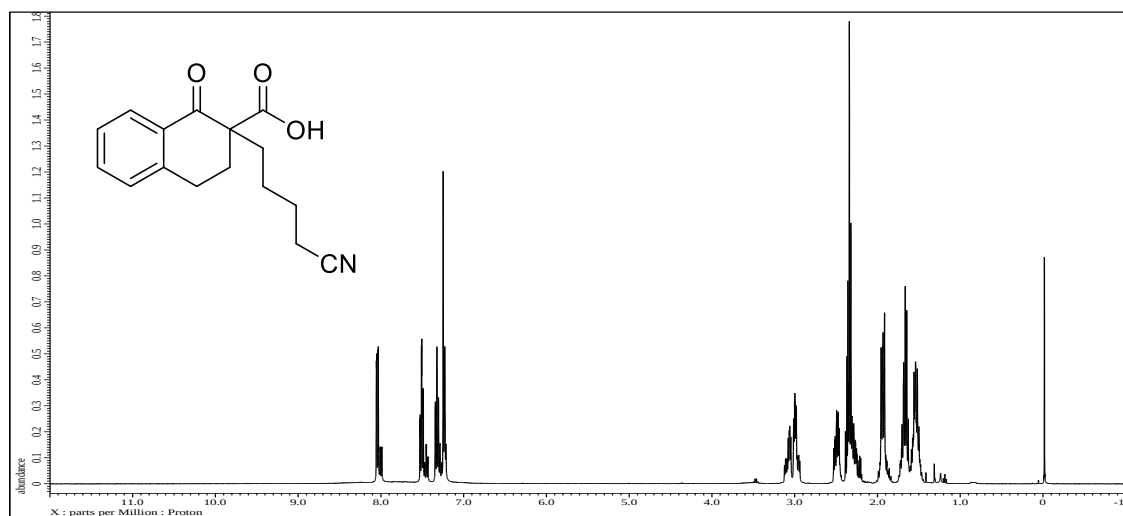


¹³C NMR

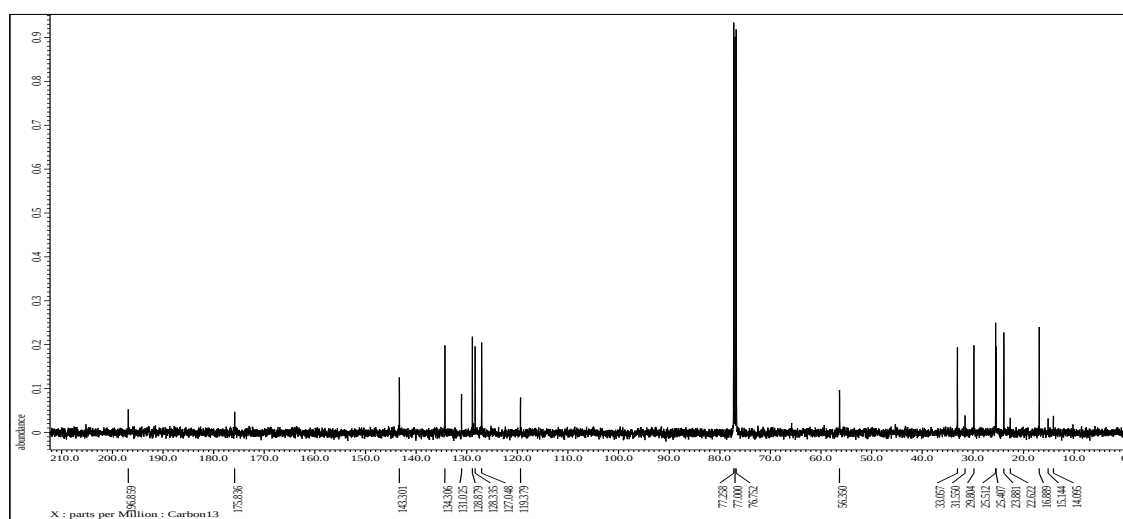


2-(4-Cyanobutyl)-1-oxo-1,2,3,4-tetrahydronaphthalene-2-carboxylic acid (1e)

¹H NMR

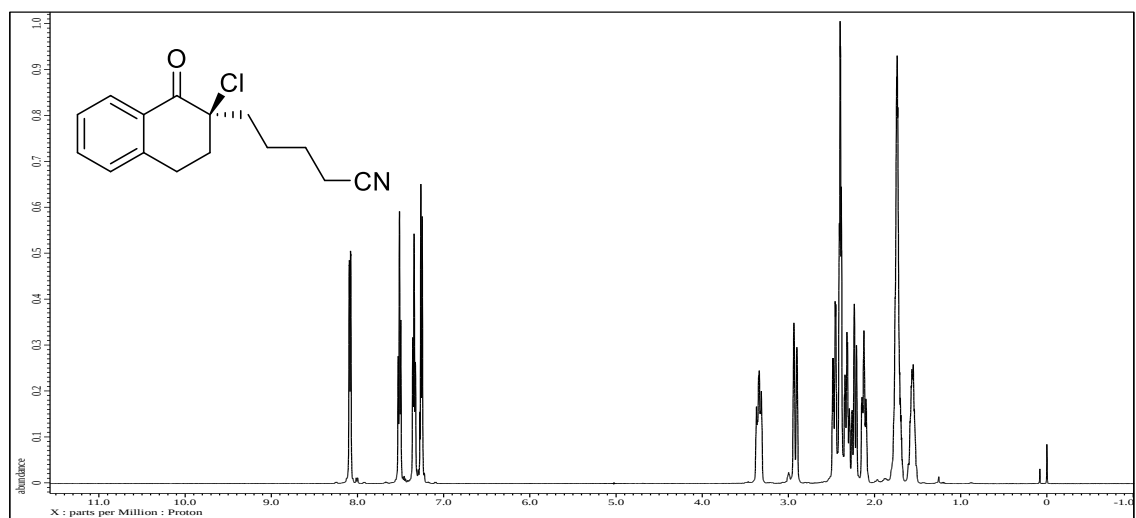


¹³C NMR

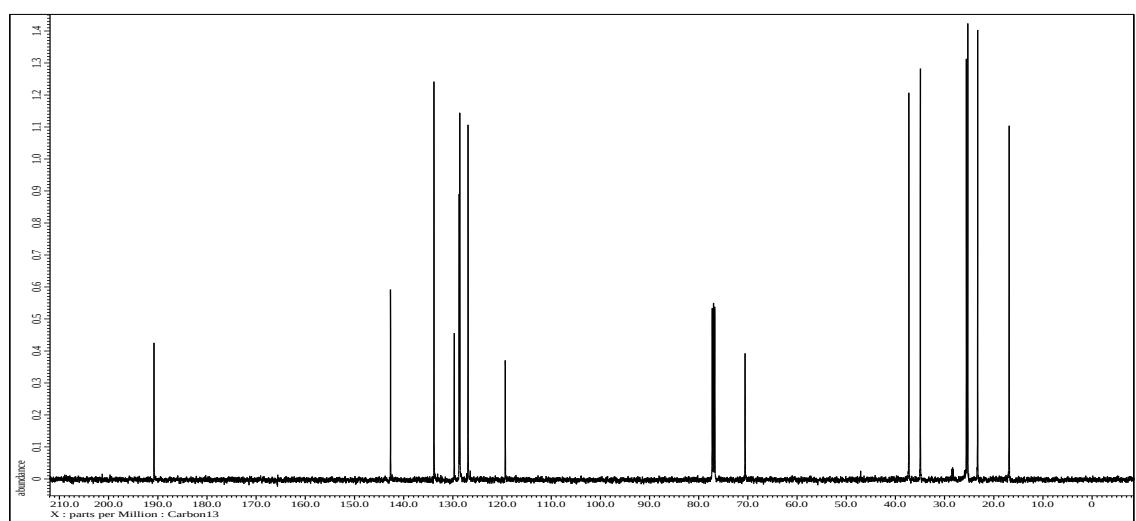


5-(2-Chloro-1-oxo-1,2,3,4-tetrahydronaphthalen-2-yl)pentanenitrile (2e)

¹H NMR

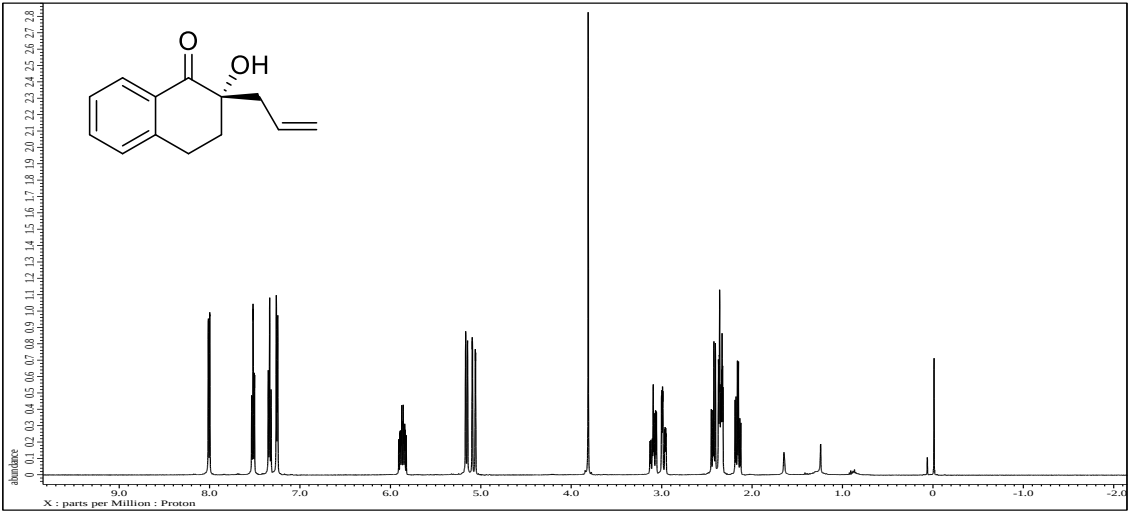


¹³C NMR

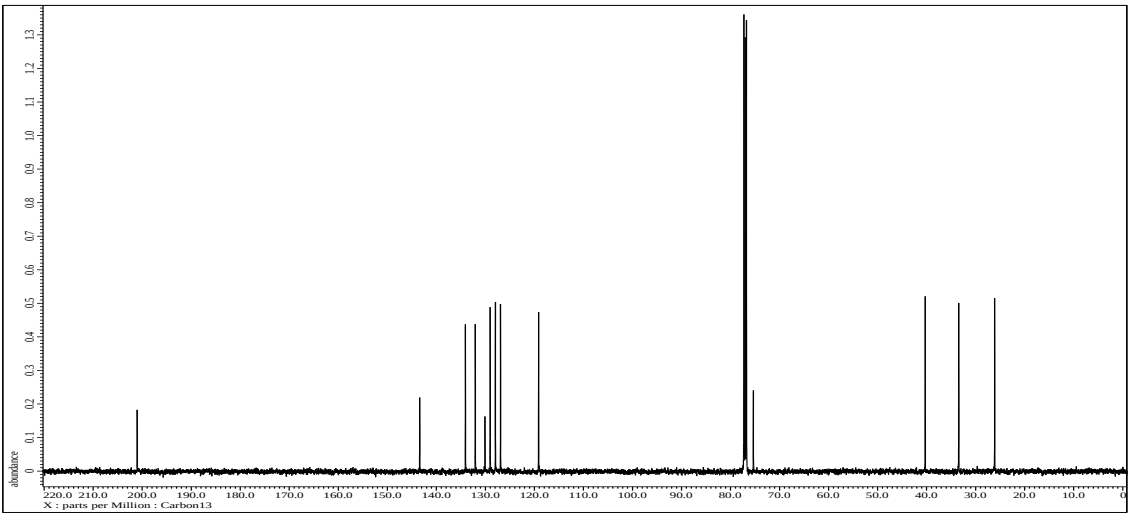


2-Allyl-2-hydroxy-3,4-dihydronaphthalen-1(2H)-one (3a)

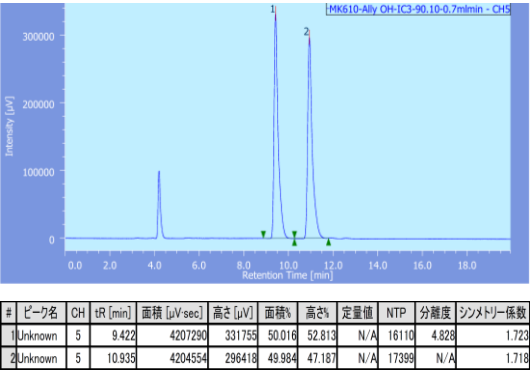
¹H NMR



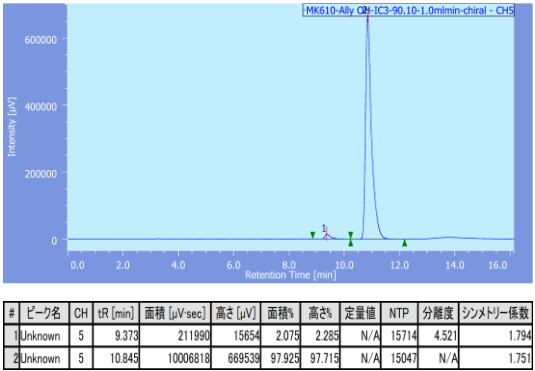
¹³C NMR



HPLC racemic

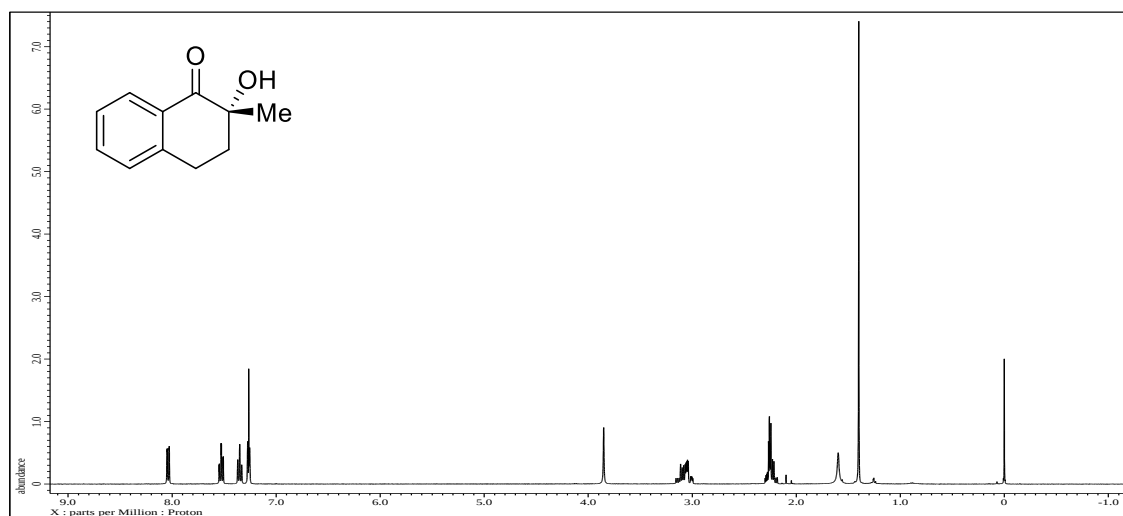


HPLC optically active

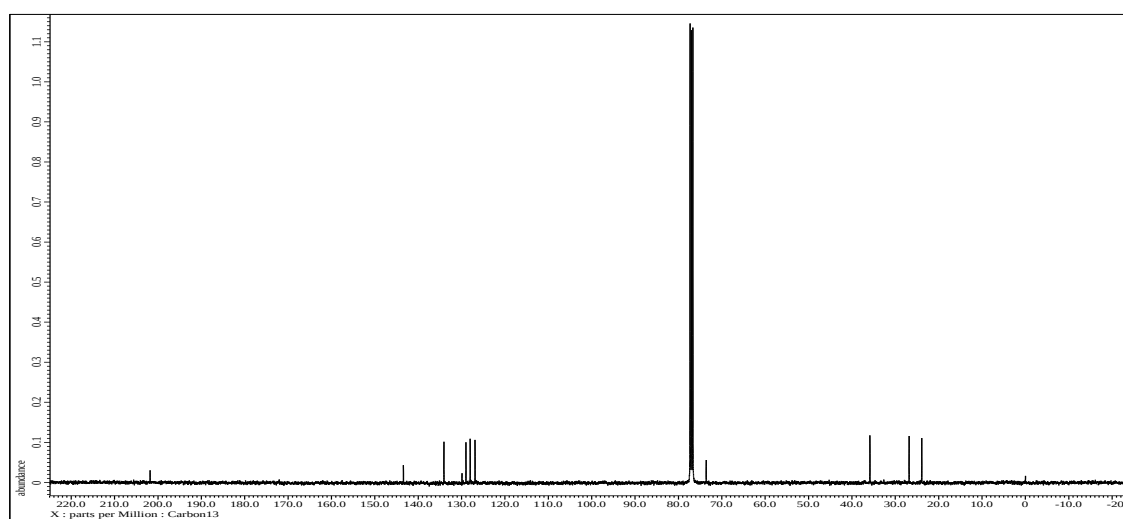


(R)-2-Hydroxy-2-methyl-3,4-dihydronaphthalen-1(2H)-one (3b)

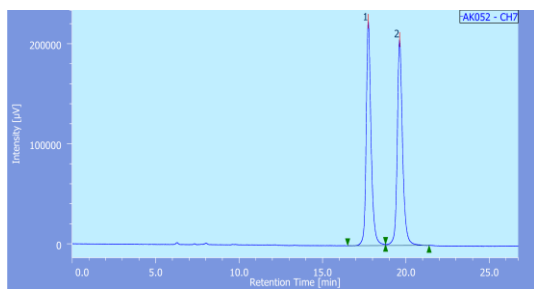
¹H NMR



¹³C NMR

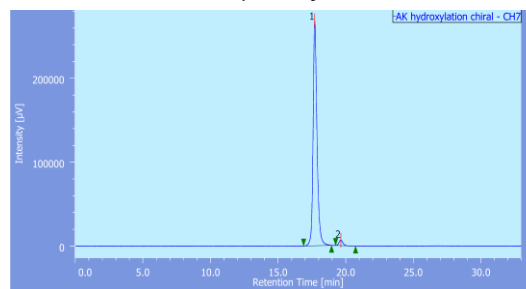


HPLC *racemic*



#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	7	17.740	4557881	224096	49.936	52.136	N/A	20670	3.647	1.264
2	Unknown	7	19.613	4569568	205737	50.064	47.864	N/A	21374	N/A	1.223

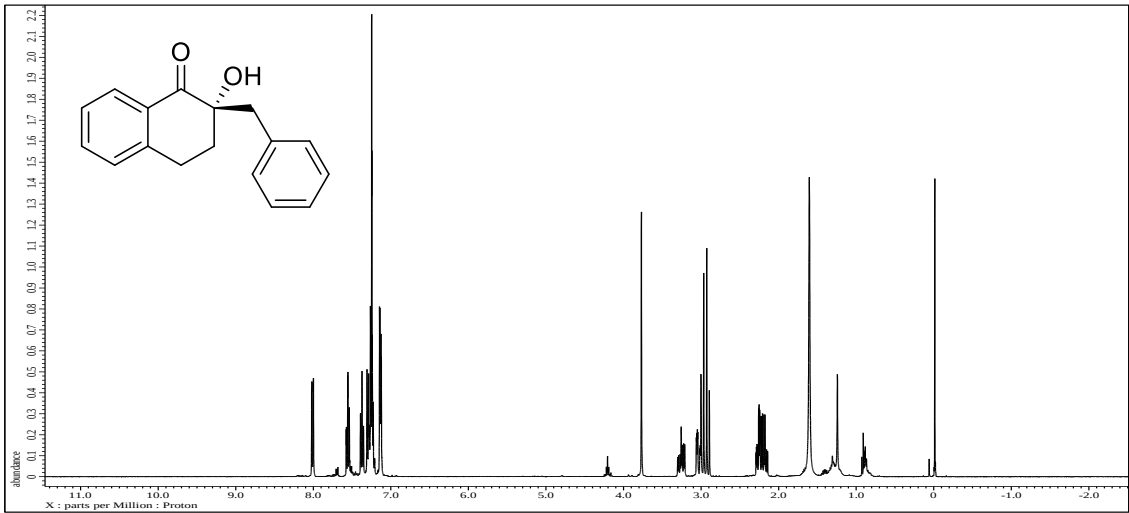
HPLC *optically active*



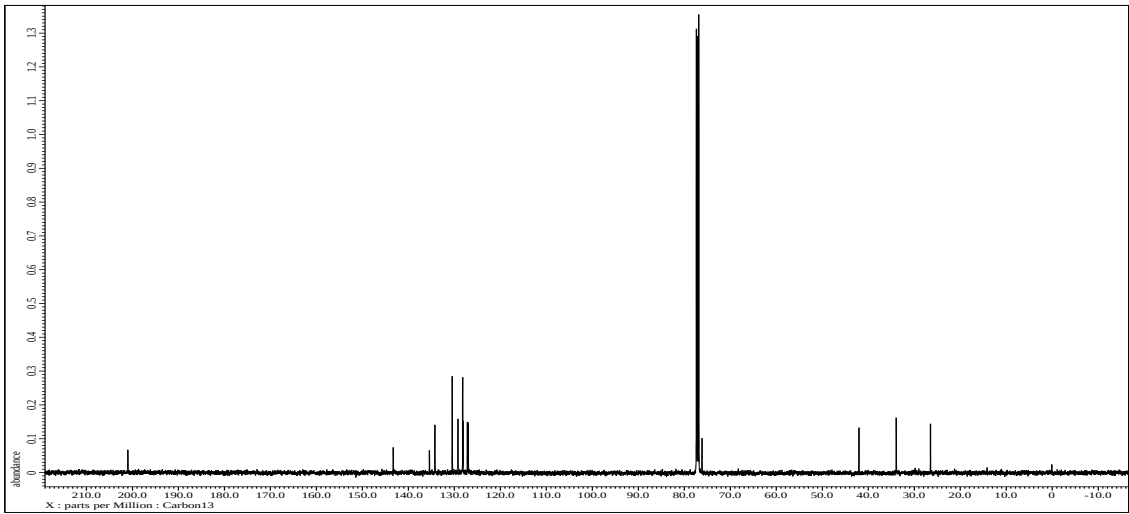
#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	7	17.707	5397168	267964	97.644	97.586	N/A	20919	3.904	1.257
2	Unknown	7	19.635	130224	6628	2.356	2.414	N/A	24602	N/A	1.134

2-Benzyl-2-hydroxy-3,4-dihydronaphthalen-1(2H)-one (3c)

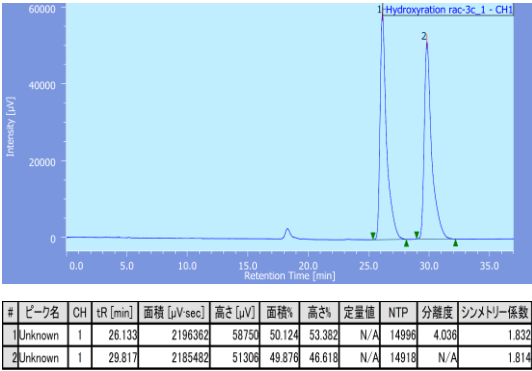
¹H NMR



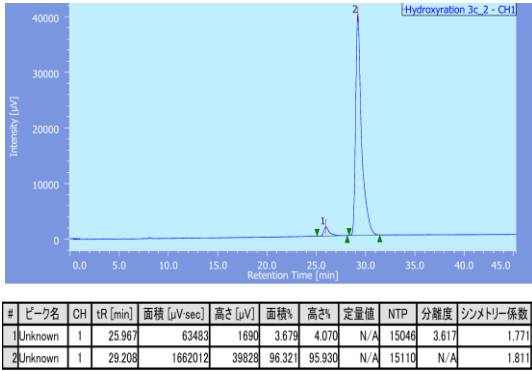
¹³C NMR



HPLC racemic

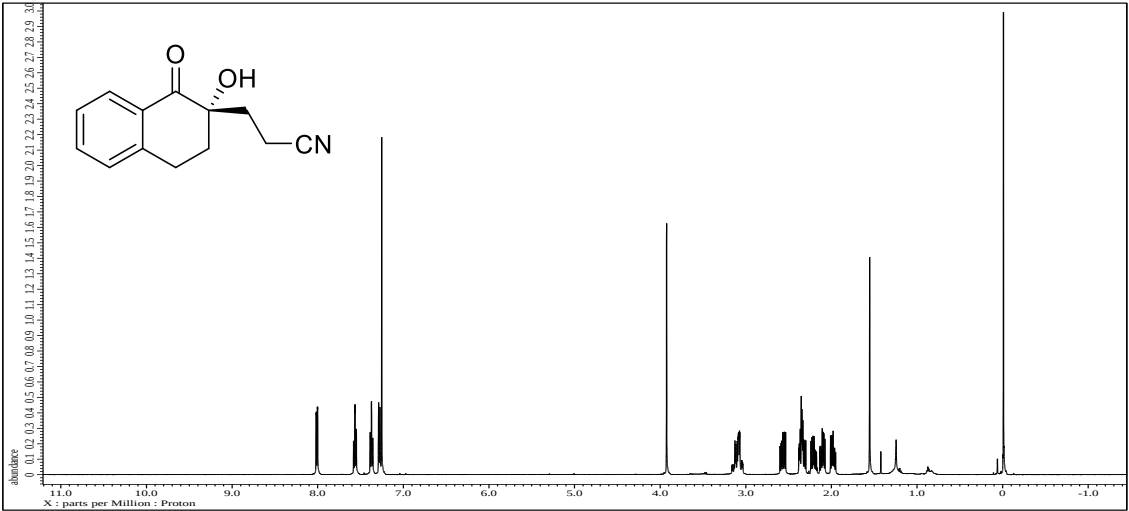


HPLC optically active

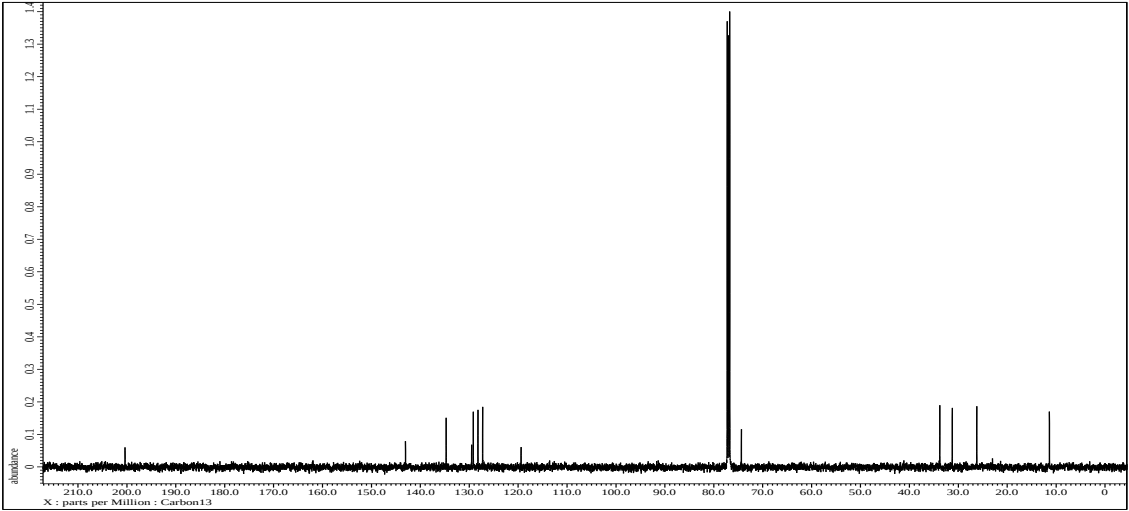


3-(2-Hydroxy-1-oxo-1,2,3,4-tetrahydronaphthalen-2-yl)propanenitrile (3d)

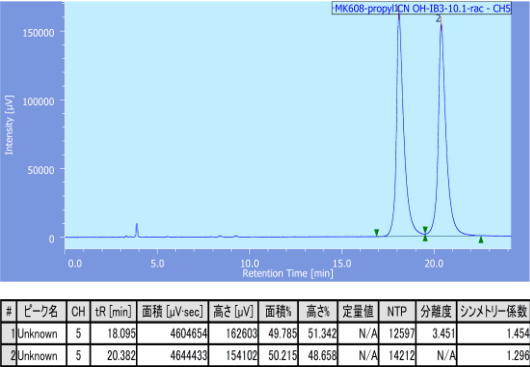
¹H NMR



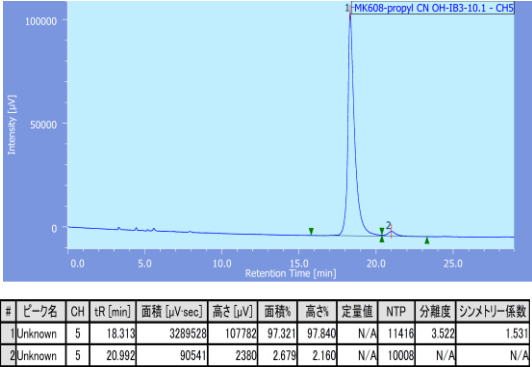
¹³C NMR



HPLC racemic

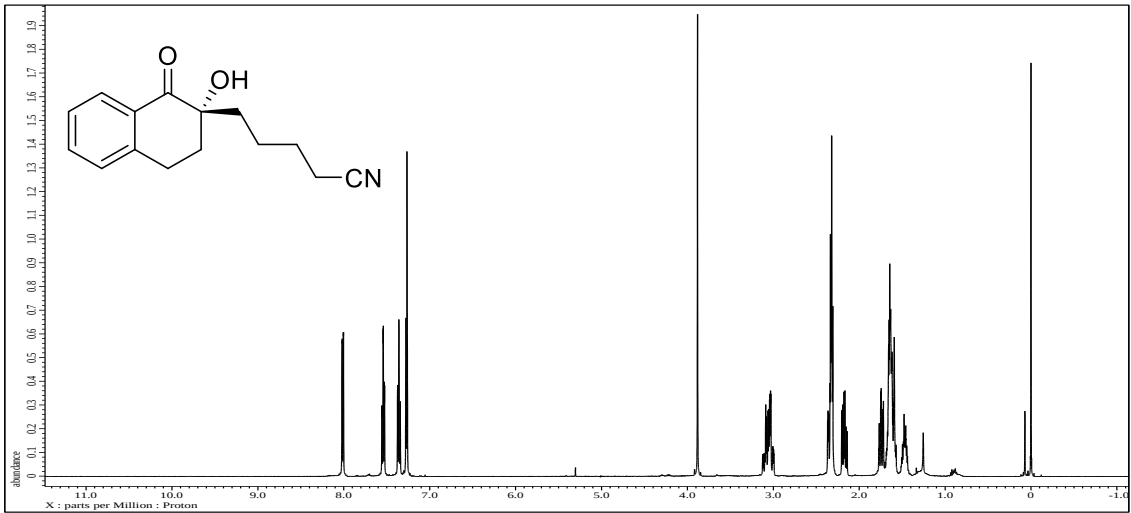


HPLC optically active

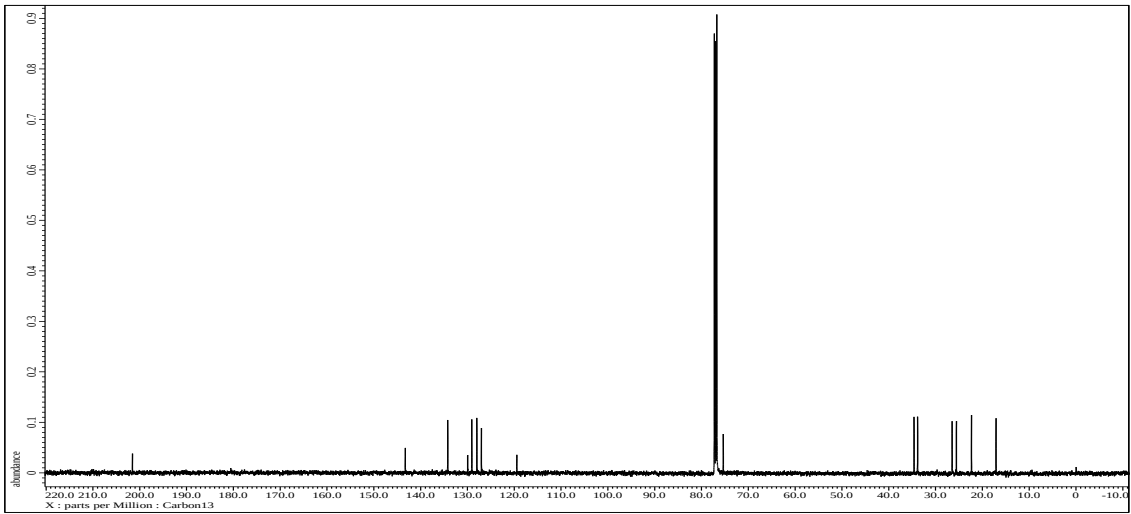


5-(2-Hydroxy-1-oxo-1,2,3,4-tetrahydronaphthalen-2-yl)pentanenitrile (3e)

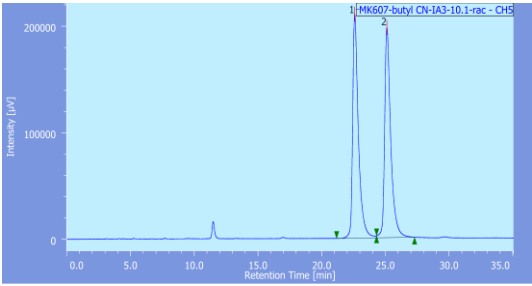
¹H NMR



¹³C NMR

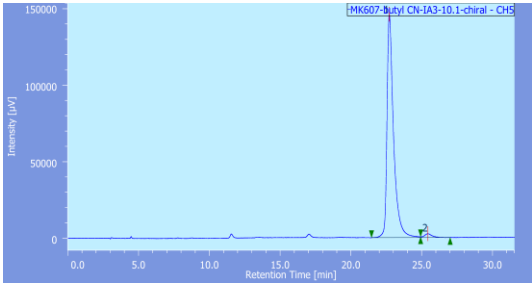


HPLC *racemic*



#	ピーク名	CH	tR [min]	面積 [μV·sec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	5	22.587	6545780	210079	49.987	51.577	N/A	14830	3.300	1.710
2	Unknown	5	25.113	6549126	197230	50.013	48.423	N/A	16028	N/A	1.614

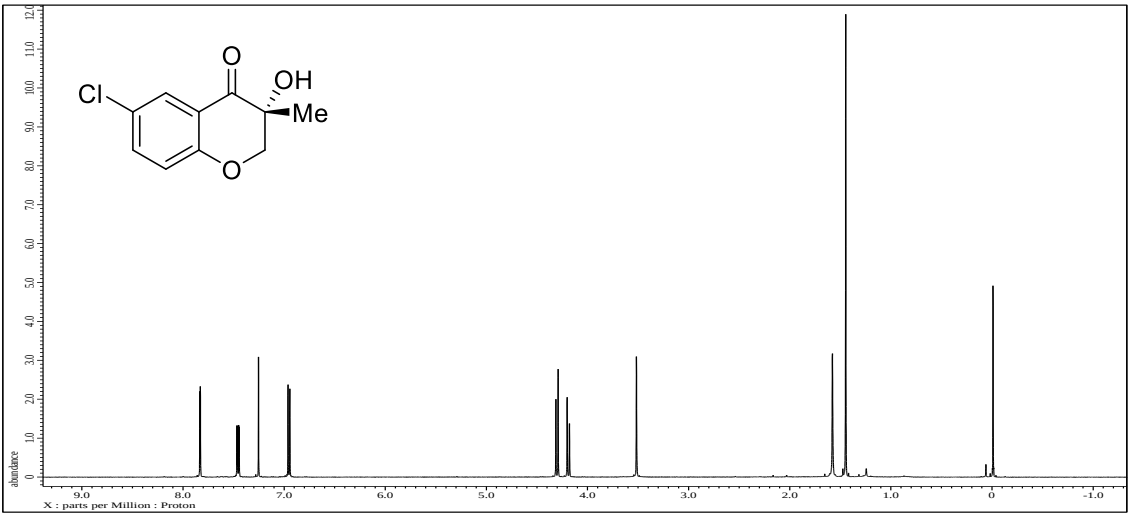
HPLC *optically active*



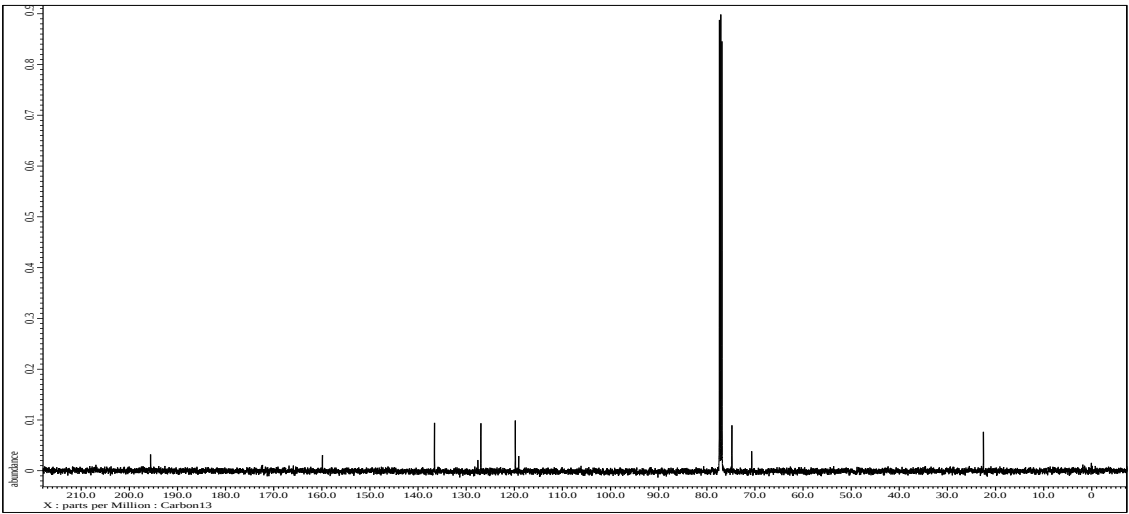
#	ピーク名	CH	tR [min]	面積 [μV·sec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	5	22.707	4692013	145947	97.991	98.249	N/A	14268	3.310	1.737
2	Unknown	5	25.432	96198	2601	2.009	1.751	N/A	13050	N/A	N/A

6-Chloro-3-hydroxy-3-methylchroman-4-one (3f)

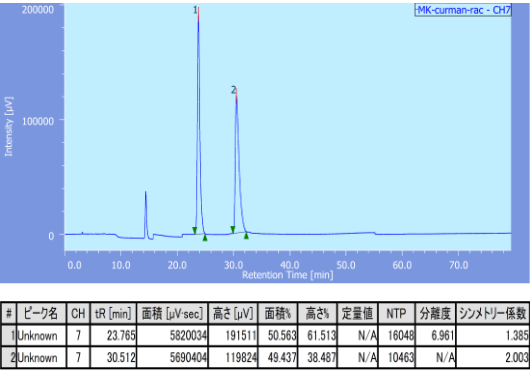
¹H NMR



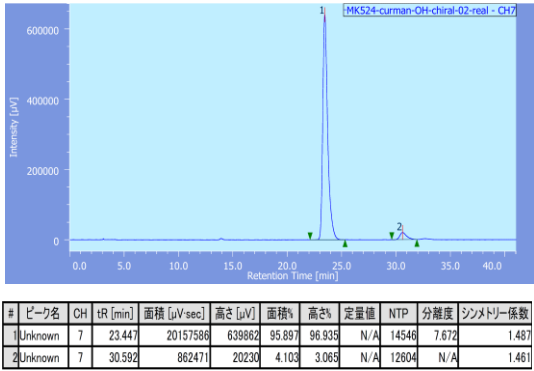
¹³C NMR



HPLC *racemic*

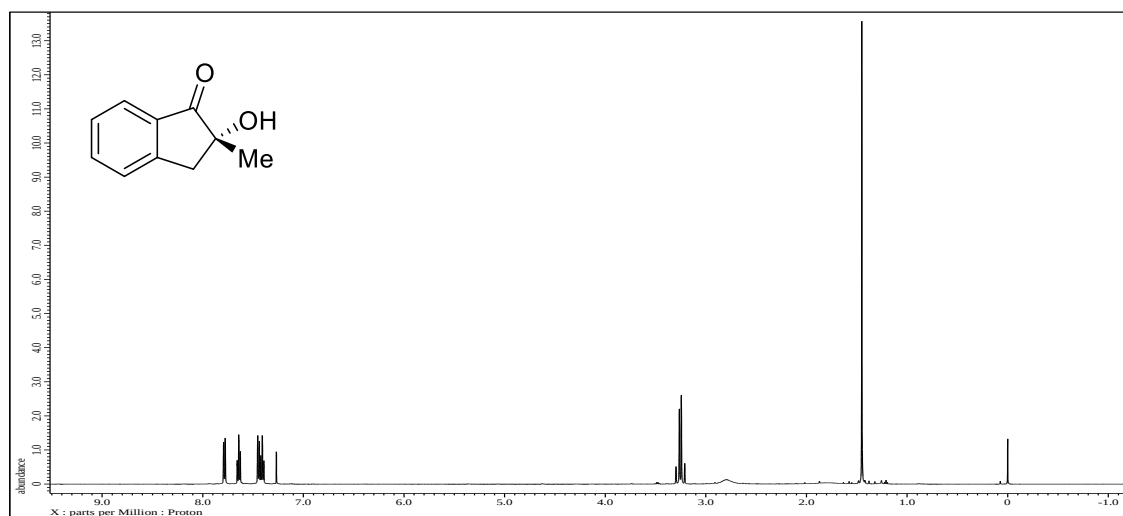


HPLC *optically active*

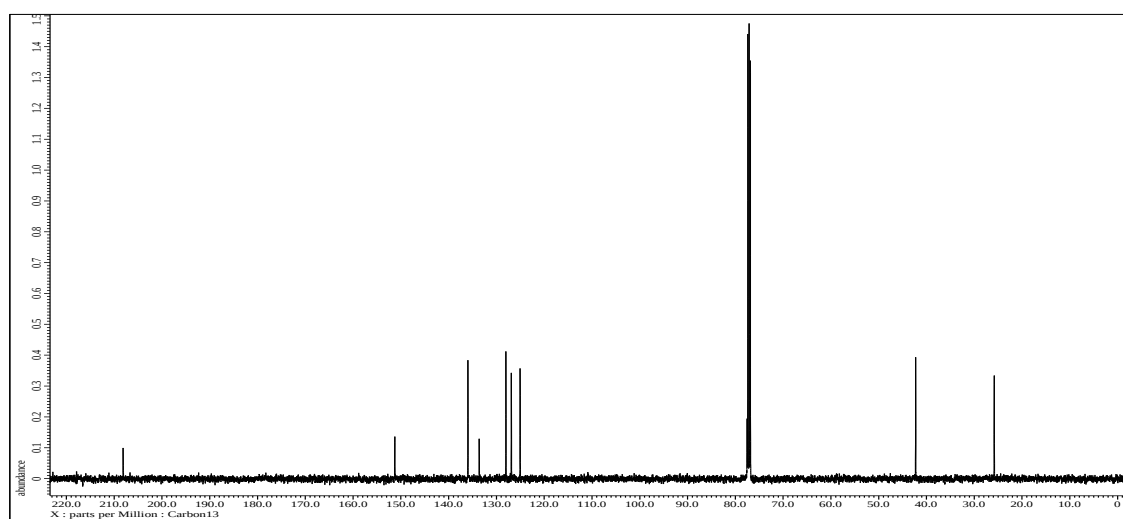


2-Hydroxy-2-methyl-2,3-dihydro-1H-inden-1-one (3g)

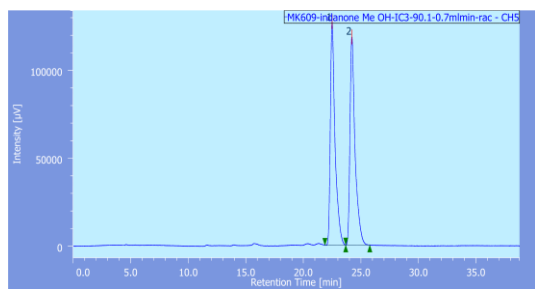
^1H NMR



^{13}C NMR

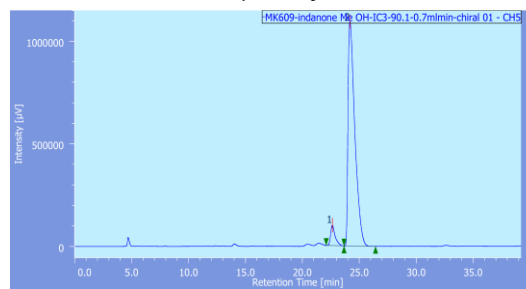


HPLC *racemic*



#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	5	22.490	3626523	127113	49.853	51.771	N/A	17853	2.462	1.684
2	Unknown	5	24.207	3647856	118415	50.147	48.229	N/A	17827	N/A	1.704

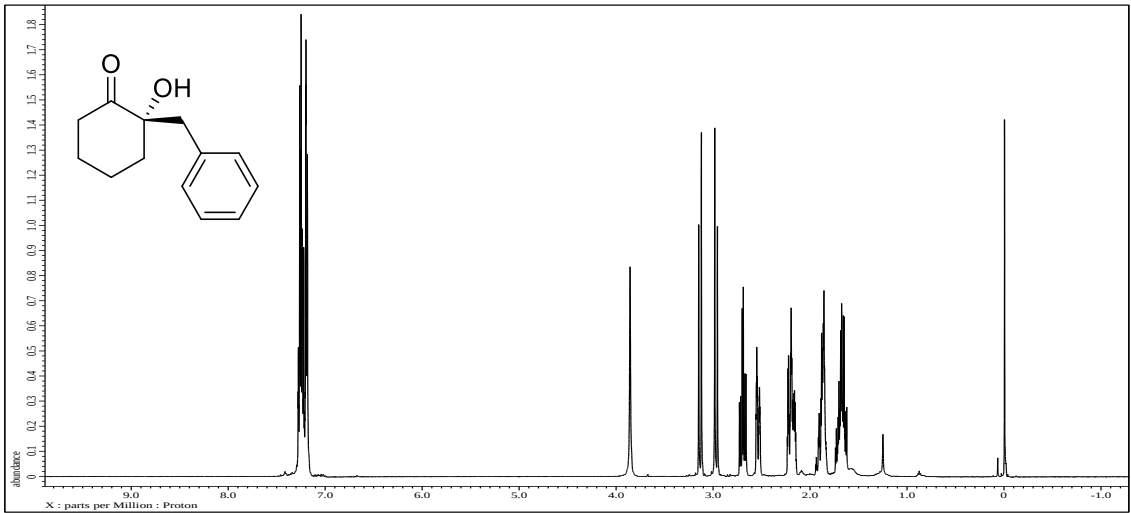
HPLC *optically active*



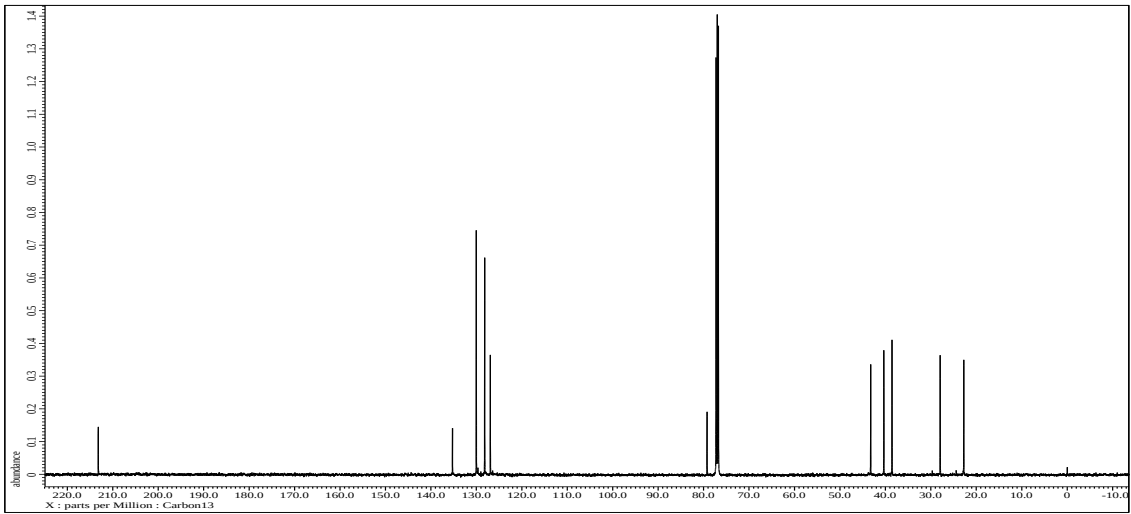
#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	5	22.628	2732476	99159	5.668	8.327	N/A	18713	1.788	1.570
2	Unknown	5	24.172	45473858	1091686	94.332	91.673	N/A	8170	N/A	2.281

2-Benyl-2-hydroxycyclohexan-1-one (3h)

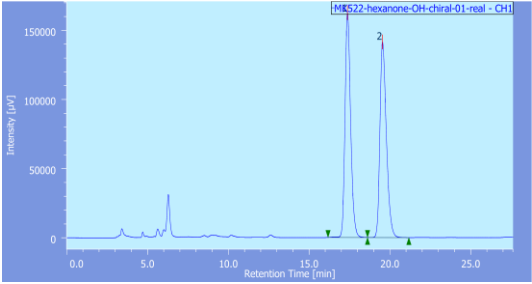
¹H NMR



¹³C NMR

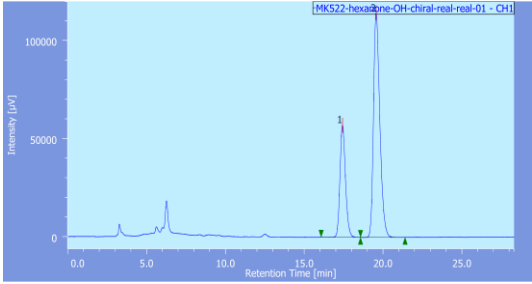


HPLC *racemic*



#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	1	17.367	3928166	162453	50.042	53.462	N/A	12476	3.249	1.240
2	Unknown	1	19.533	3921614	141414	49.958	46.538	N/A	11925	N/A	1.368

HPLC *optically active*



#	ピーク名	CH	tR [min]	面積 [μVsec]	高さ [μV]	面積%	高さ%	定量値	NTP	分離度	シンメトリー係数
1	Unknown	1	17.425	1382718	57110	30.133	33.287	N/A	12428	3.170	1.171
2	Unknown	1	19.558	3205981	114457	69.867	66.713	N/A	11669	N/A	1.316