

Anexo IV:

HPLC chromatograms

Capítulo 2:

Catalytic asymmetric 1,3 dipolar cycloaddition of α -heteroarylsilylimines and activated olefins 2

Capítulo 3:

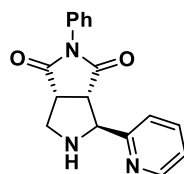
Catalytic asymmetric synthesis of azabicycles by 1,3-dipolar cycloaddition/intramolecular alkylation..... 24

Capítulo 4:

Alkenylarenes as dipolarophiles in catalytic asymmetric 1,3-dipolar cycloadditions of azomethine ylides..... 38

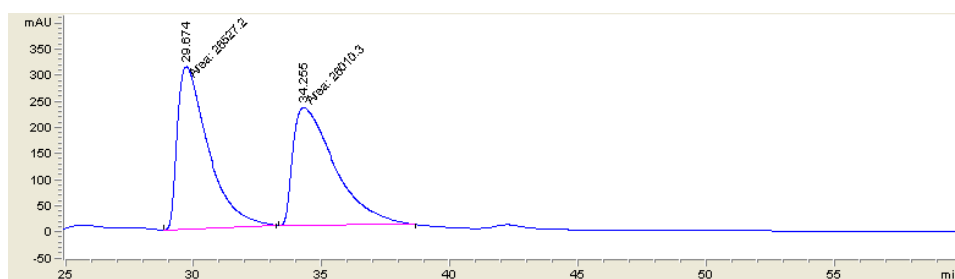
Capítulo 2: Catalytic asymmetric 1,3 dipolar cycloaddition of α -heteroarylsilylimines and activated olefins

(3*aS*,4*S*,6*aR*)-2-Phenyl-4-(2-pyridinyl)tetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione
(*trans*-9*a*)



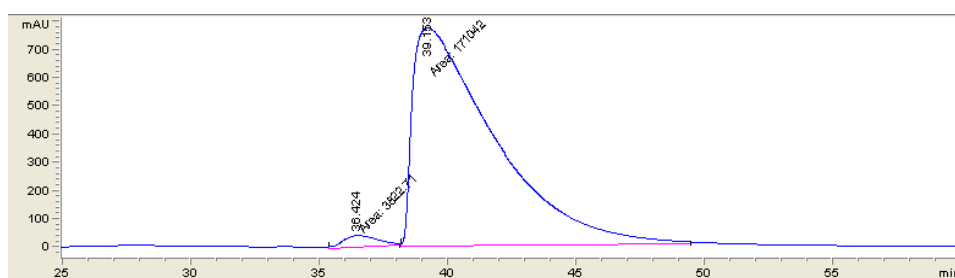
trans-9*a*

Racemic

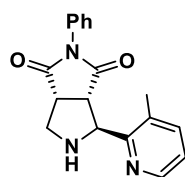


#	Time	Area	Height	Width	Area%	Symmetry
1	29.674	26527.2	314.4	1.4061	50.492	0.375
2	34.255	26010.3	227.2	1.9083	49.508	0.324

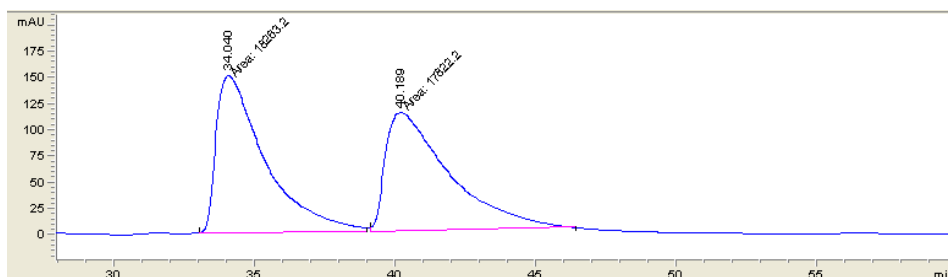
(+)-*trans*-9*a*: 96% ee



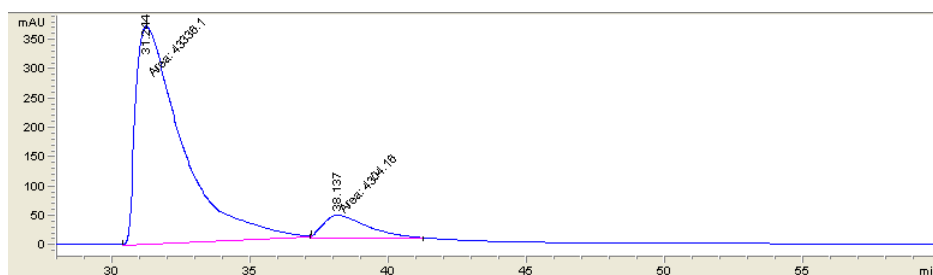
#	Time	Area	Height	Width	Area%	Symmetry
1	36.424	3822.7	41.1	1.5508	2.186	0.705
2	39.153	171041.6	772.6	3.6898	97.814	0.207

(3*aS*,4*S*,6*aR*)-4-(3-Methyl-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9b)*trans*-9b

Racemic

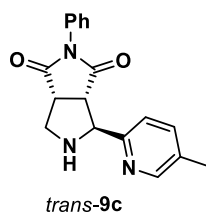


#	Time	Area	Height	Width	Area%	Symmetry
1	34.04	18263.2	150.8	2.0186	50.611	0.324
2	40.189	17822.2	112.6	2.6381	49.389	0.314

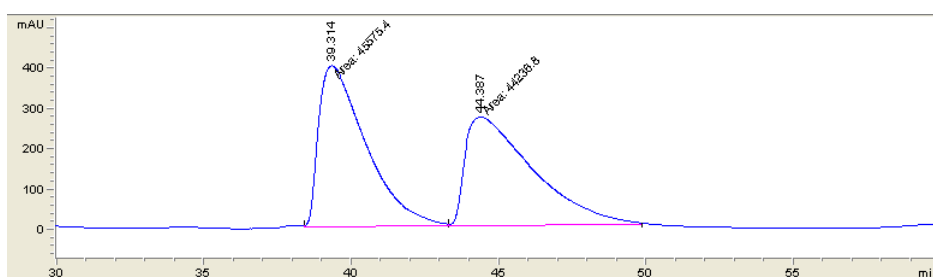
(+)-*trans*-9b: 82% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	31.244	43336.1	372.4	1.9395	90.965	0.292
2	38.137	4304.2	38.9	1.8463	9.035	0.459

(3*aS*,4*S*,6*aR*)-4-(5-Methyl-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9c)

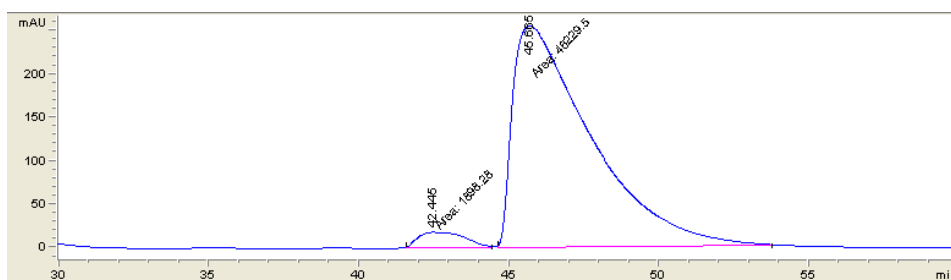


Racemic



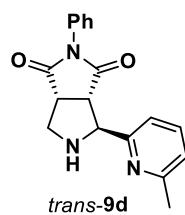
#	Time	Area	Height	Width	Area%	Symmetry
1	39.314	45575.4	402.6	1.8868	50.745	0.361
2	44.387	44236.8	272.1	2.7092	49.255	0.297

(+)-*trans*-9c: 92% ee

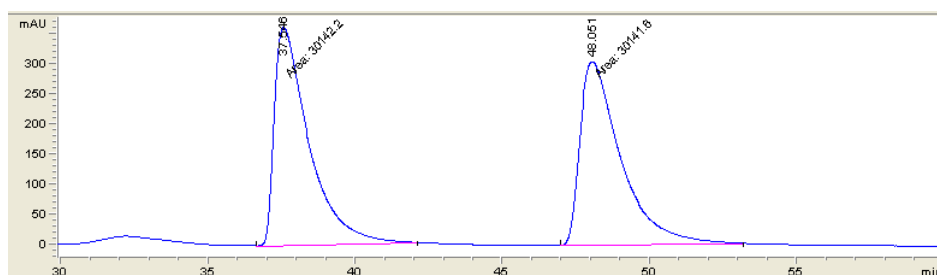


#	Time	Area	Height	Width	Area%	Symmetry
1	42.445	1898.3	17.7	1.7885	3.944	0.445
2	45.665	46229.5	254.7	3.0247	96.056	0.26

(3*aS*,4*S*,6*aR*)-4-(6-Methyl-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9d)

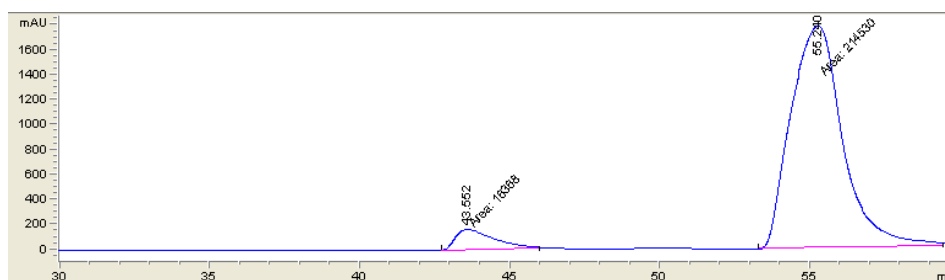


Racemic



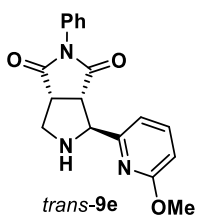
#	Time	Area	Height	Width	Area%	Symmetry
1	37.546	30142.2	363.8	1.381	50.000	0.344
2	48.051	30141.6	305.7	1.6435	50.000	0.426

(+)-*trans*-9d: 86% ee

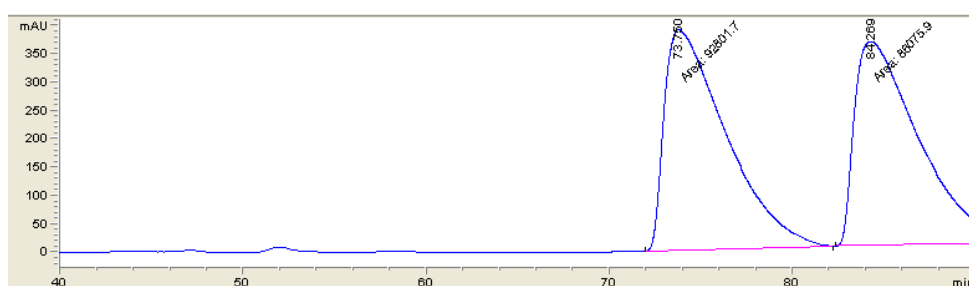


#	Time	Area	Height	Width	Area%	Symmetry
1	43.552	16368	172.4	1.5822	7.089	0.414
2	55.24	214529.9	1778.1	2.0108	92.911	0.998

(3*aS*,4*S*,6*aR*)-4-(6-Methoxy-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9e)

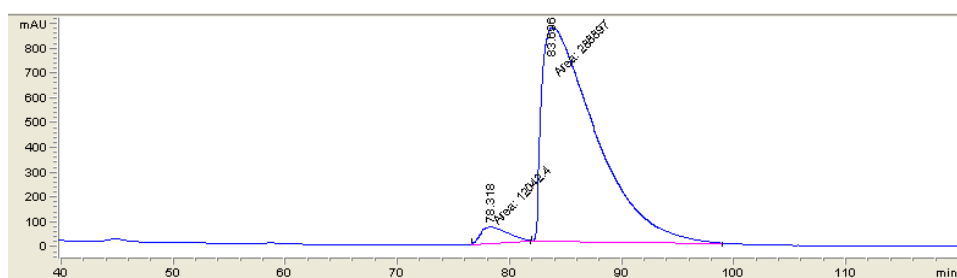


Racemic



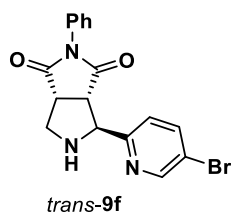
#	Time	Area	Height	Width	Area%	Symmetry
1	73.75	92801.7	391.8	3.9473	51.880	0.295
2	84.269	86075.9	360.7	3.977	48.120	0.349

(+)-*trans*-9e: 92% ee

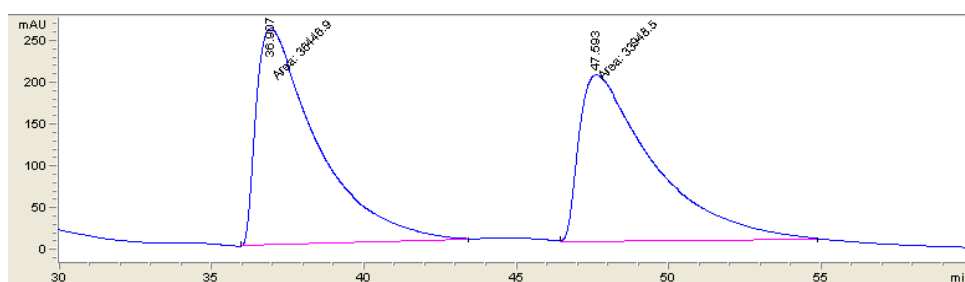


#	Time	Area	Height	Width	Area%	Symmetry
1	78.318	12042.4	68.5	2.9313	4.002	0.594
2	83.696	288897.3	864.4	5.5701	95.998	0.213

(3*aS*,4*S*,6*aR*)-4-(5-Bromo-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9f)

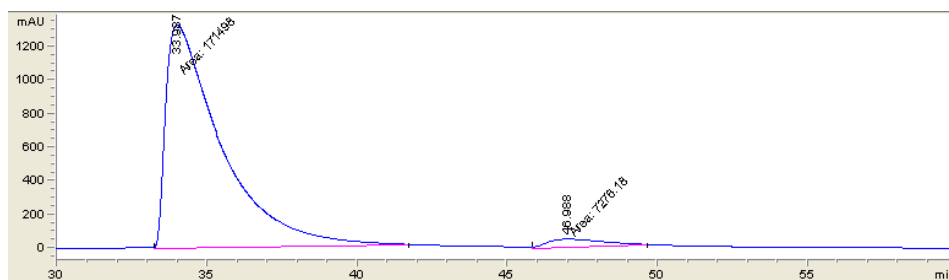


Racemic

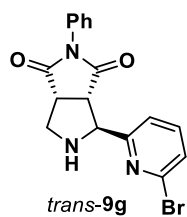


#	Time	Area	Height	Width	Area%	Symmetry
1	36.907	36446.9	260.1	2.335	51.775	0.286
2	47.593	33948.5	199.1	2.8425	48.225	0.281

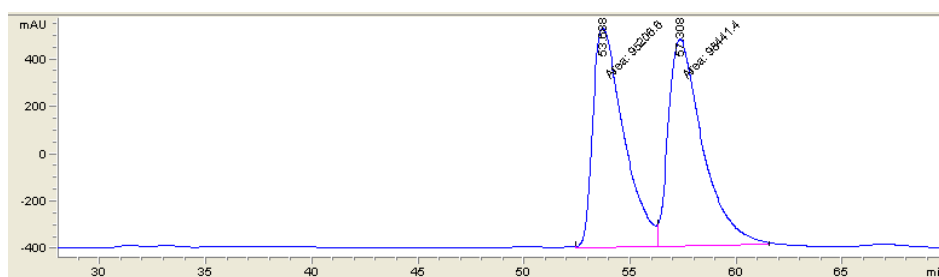
(+)-*trans*-9f: 92% ee



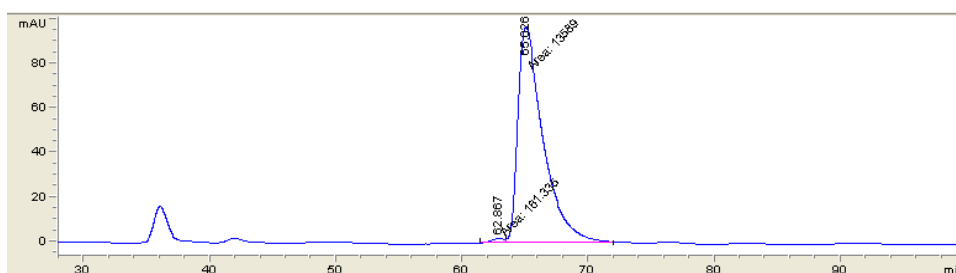
#	Time	Area	Height	Width	Area%	Symmetry
1	33.987	171497.8	1328.7	2.1512	95.930	0.241
2	46.988	7276.2	51.6	1.6663	4.070	0.511

(3*aS*,4*S*,6*aR*)-4-(6-Bromo-2-pyridinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3-dione (*trans*-9g)

Racemic

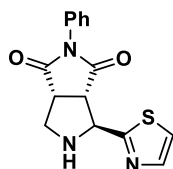


#	Time	Area	Height	Width	Area%	Symmetry
1	53.688	95206.6	929.8	1.7066	49.165	0.469
2	57.308	98441.4	878	1.8686	50.835	0.477

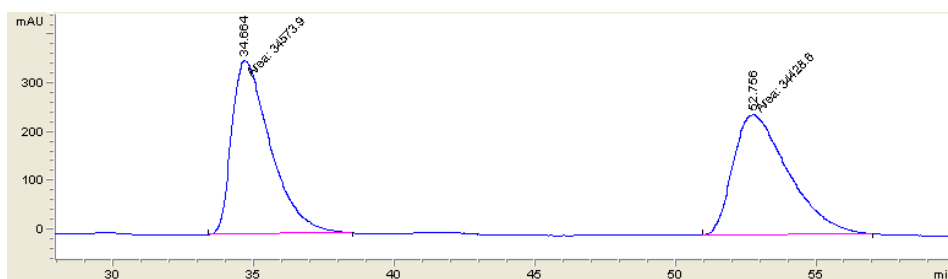
(-)-*trans*-9g: 98% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	62.867	161.3	2	1.3255	1.173	1.388
2	65.026	13589	97.2	2.3308	98.827	0.427

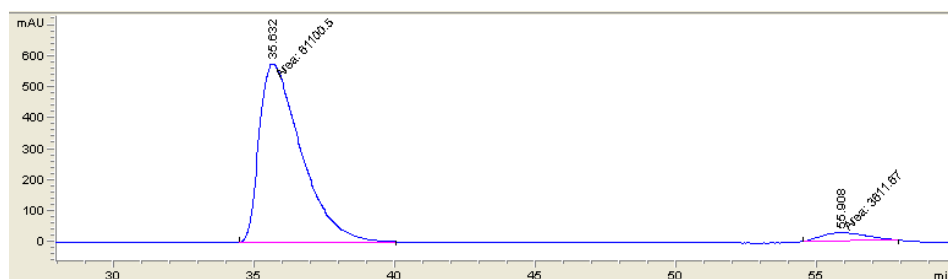
(3*aS*,4*S*,6*aR*)-4-(2-Thiazolyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione
(*trans*-9h)

*trans*-9h

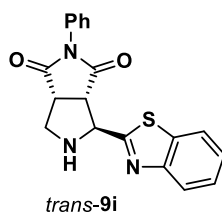
Racemic



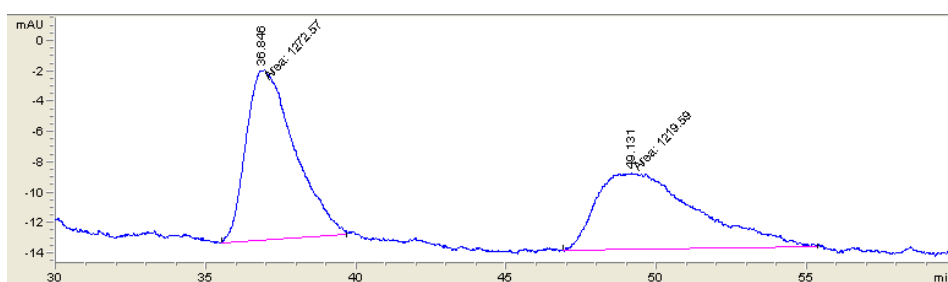
#	Time	Area	Height	Width	Area%	Symmetry
1	34.664	34573.9	356.9	1.6144	50.105	0.493
2	52.756	34428.6	248.7	2.3074	49.895	0.563

(+)-*trans*-9h: 89% ee

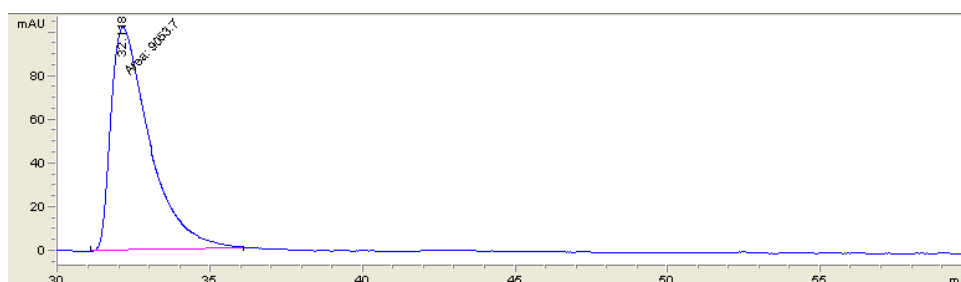
#	Time	Area	Height	Width	Area%	Symmetry
1	35.632	61100.5	580	1.7558	94.419	0.452
2	55.908	3611.7	29.4	2.045	5.581	0.815

(3*aS*,4*S*,6*aR*)-4-(Benzo[*d*]thiazol-2-yl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-9i)

Racemic

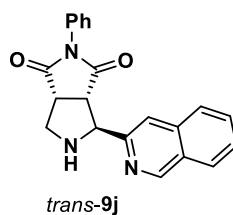


#	Time	Area	Height	Width	Area%	Symmetry
1	36.846	1272.6	11.2	1.8882	51.063	0.484
2	49.131	1219.6	5.1	3.9813	48.937	0.504

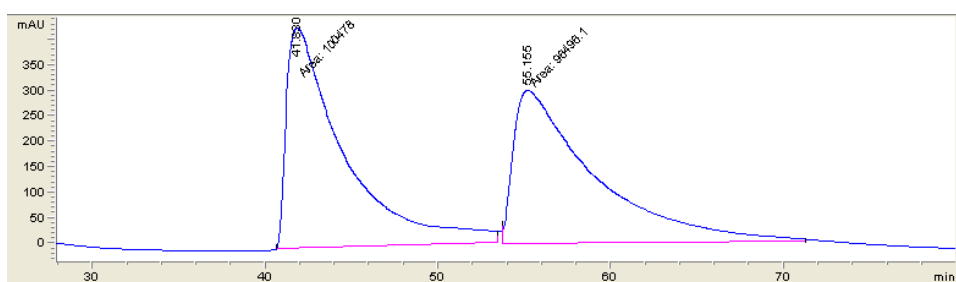
(+)-*trans*-9i: ≥98% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	32.118	9053.7	102.5	1.4719	100.000	0.426

**(3a*S*,4*S*,6a*R*)-4-(3-Isoquinolinyl)-2-phenyltetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3a*H*)-dione
(*trans*-9j)**

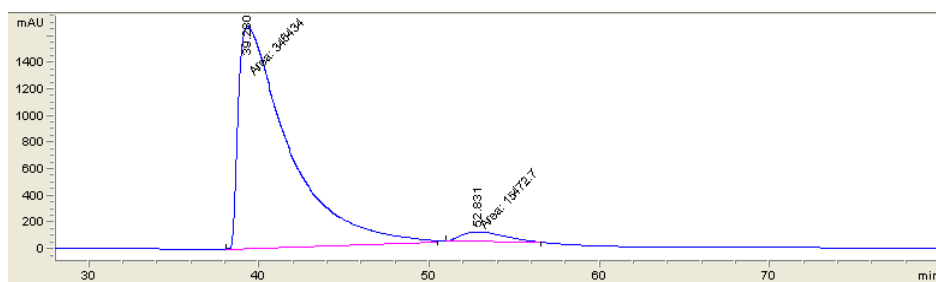


Racemic

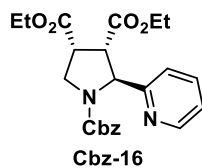


#	Time	Area	Height	Width	Area%	Symmetry
1	41.83	100477.7	433.6	3.8622	51.011	0.226
2	55.155	96496.1	300.2	5.3576	48.989	0.205

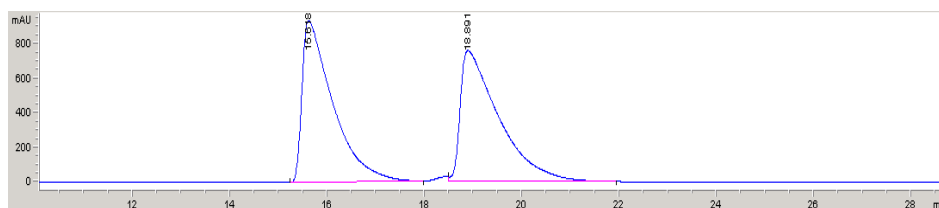
(+)-*trans*-9j: 91% ee



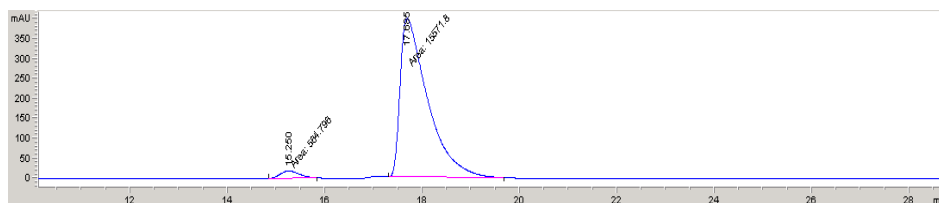
#	Time	Area	Height	Width	Area%	Symmetry
1	39.28	346433.7	1671.6	3.4542	95.725	0.204
2	52.831	15472.7	81.2	3.1761	4.275	0.536

(2*S*,3*S*,4*R*)-Diethyl *N*-carboxybenzyl-2-(2-pyridinyl)pyrrolidine-3,4-dicarboxylate (Cbz-16)

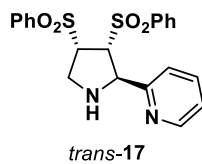
Racemic



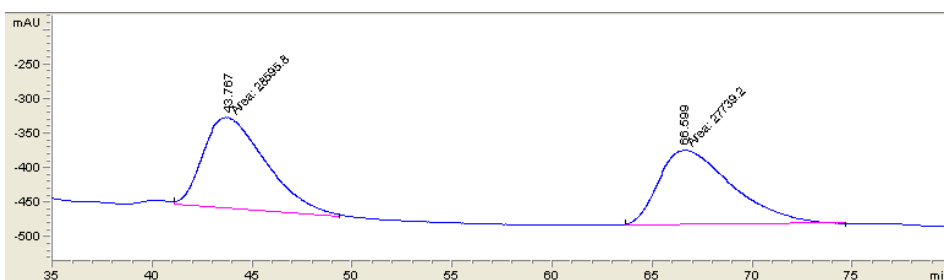
#	Time	Area	Height	Width	Area%	Symmetry
1	15.618	41379.4	934.3	0.6207	49.672	0.254
2	18.891	41925.7	760.4	0.7713	50.328	0.236

(+)-Cbz-16: 93% ee

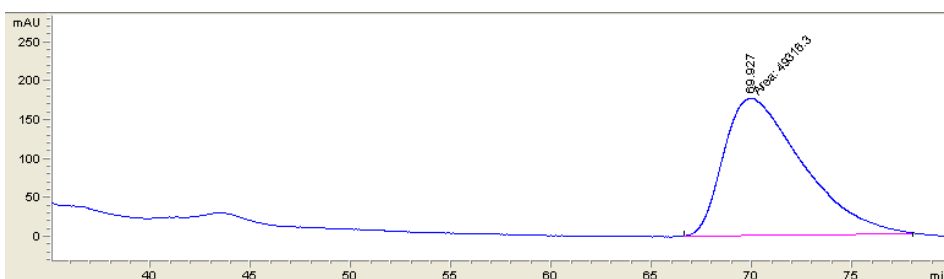
#	Time	Area	Height	Width	Area%	Symmetry
1	15.25	564.8	19.4	0.4846	3.500	0.729
2	17.685	15571.8	396.4	0.6547	96.500	0.331

(2R,3R,4S)-3,4-Bis(phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine (*trans*-17)

Racemic

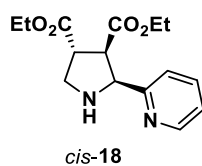


#	Time	Area	Height	Width	Area%	Symmetry
1	43.767	28595.8	131.3	3.6301	50.760	0.611
2	66.599	27739.2	108.2	4.2742	49.240	0.536

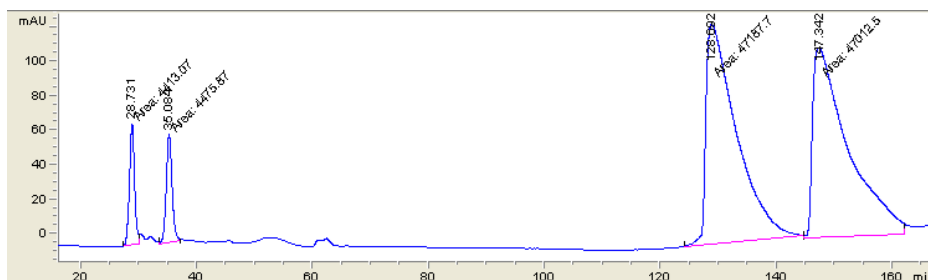
(-)-*trans*-17: $\geq 98\%$ ee

#	Time	Area	Height	Width	Area%	Symmetry
1	69.927	49316.3	178.1	4.6142	100.000	0.516

Diethyl (2*S*,3*R*,4*R*)-2-(2-pyridinyl)pyrrolidine-3,4-dicarboxylate (*cis*-18)

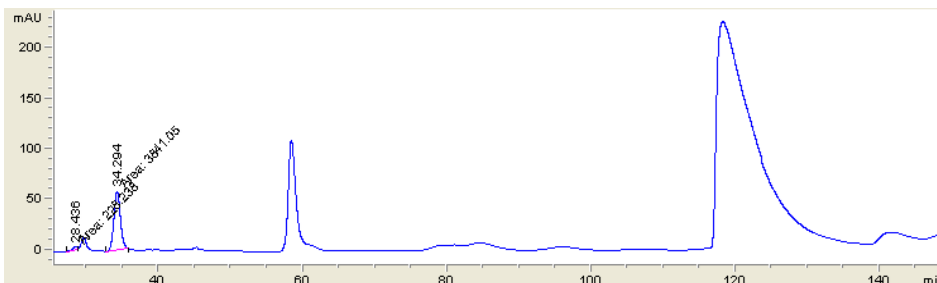


Racemic *cis* + *trans*

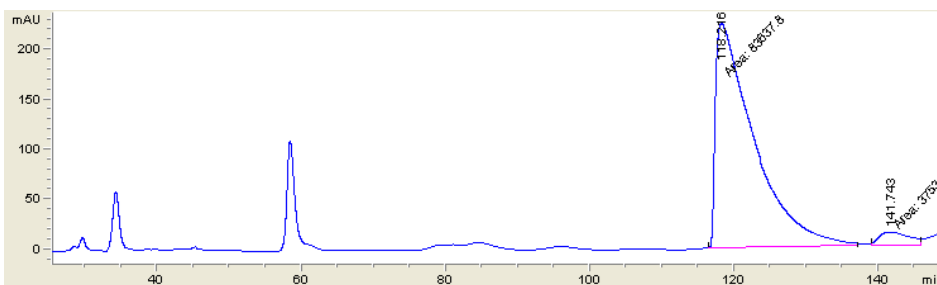


#	Time	Area	Height	Width	Area%	Symmetry
1	28.731	4413.1	70.4	1.0441	4.281	0.949
2	35.084	4475.9	63.3	1.1793	4.342	0.88
3	128.692	47187.7	127.9	6.1506	45.774	0.224
4	147.342	47012.5	110.9	7.0657	45.604	0.207

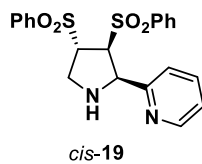
(-)-18: 89% *ee trans* and 91% *ee cis*



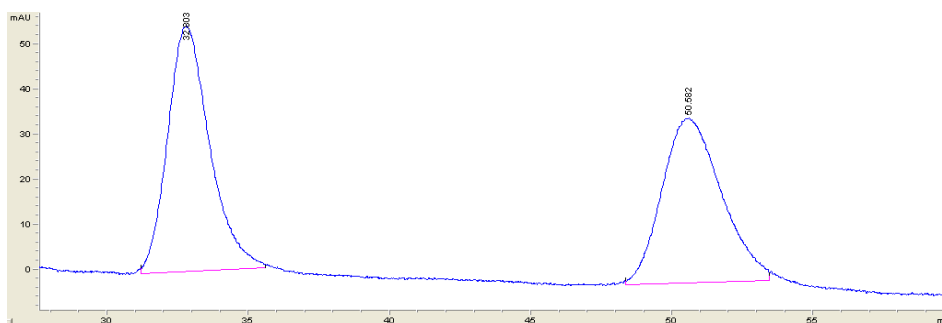
#	Time	Area	Height	Width	Area%	Symmetry
1	28.436	228.2	4	0.9488	5.609	1.259
2	34.294	3841	59.2	1.0805	94.391	0.962



#	Time	Area	Height	Width	Area%	Symmetry
1	118.216	83637.8	225.6	6.1798	95.705	0.174
2	141.743	3753.8	13.3	4.6959	4.295	0.575

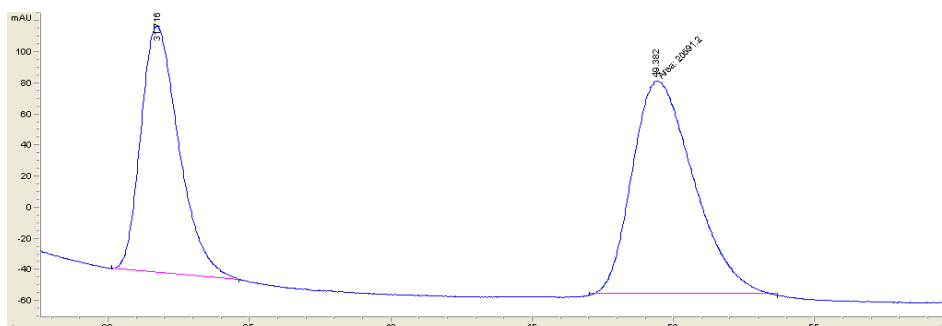
(2*R*,3*S*,4*S*)-3,4-Bis(phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine (*cis*-19)

Racemic

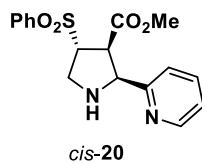


#	Time	Area	Height	Width	Area%	Symmetry
1	32.803	5648.6	54.5	1.2212	51.325	0.801
2	50.582	5356.9	36.6	1.7191	48.675	0.804

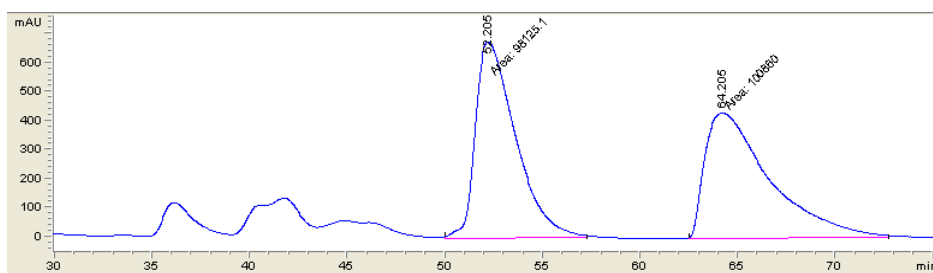
cis-19: 16% ee



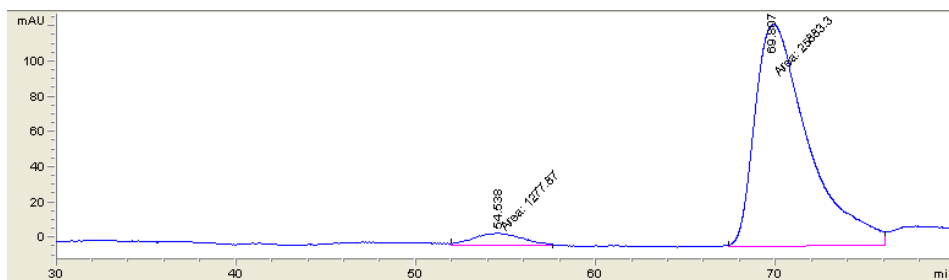
#	Time	Area	Height	Width	Area%	Symmetry
1	31.716	14869	158.5	1.1263	41.932	0.706
2	49.382	20591.2	136.9	2.5066	58.068	0.641

Methyl (2*S*,3*R*,4*R*)-4-(phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine-3-carboxylate (*cis*-20)

Racemic

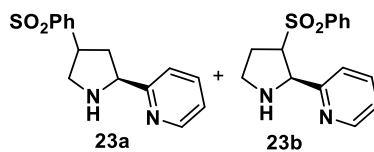


#	Time	Area	Height	Width	Area%	Symmetry
1	52.205	98125.1	680.7	2.4025	49.313	0.481
2	64.205	100859.6	436.4	3.8518	50.687	0.371

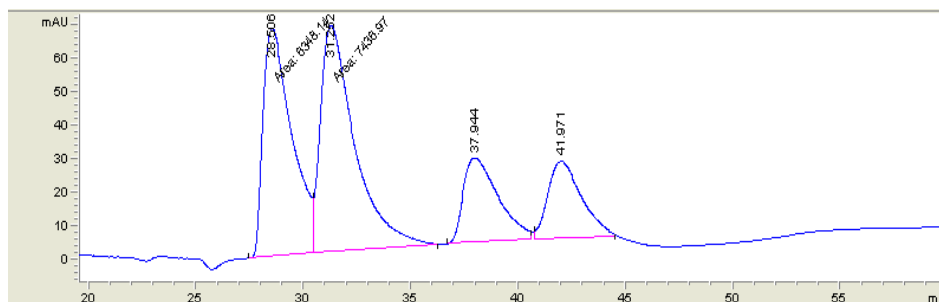
(-)-*cis*-20: 91% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	54.538	1277.9	6.9	3.0799	4.705	1.019
2	69.807	25883.3	126.1	3.4213	95.295	0.479

(2*R*)-4-(Phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine and 2-((2*R*)-3-(phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine (23a + 23b)

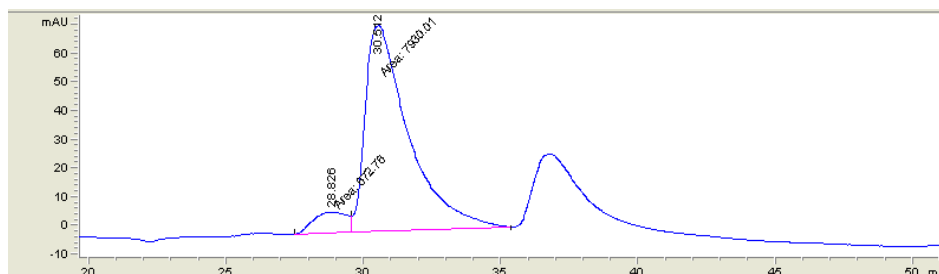


Racemic

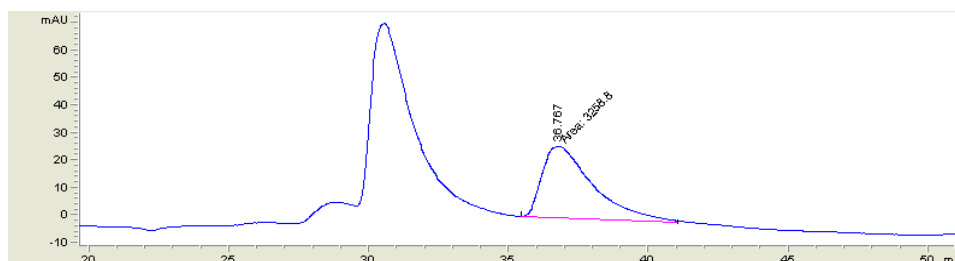


#	Time	Area	Height	Width	Area%	Symmetry
1	28.506	6348.1	68	1.5557	33.114	0
2	31.252	7437	67.5	1.8368	38.793	0.4
3	37.944	2871.7	25.3	1.3387	14.980	0.454
4	41.971	2513.9	23.2	1.2869	13.113	0.61

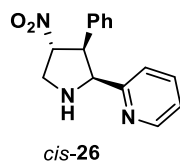
80% ee 23a and $\geq 98\%$ ee 23b



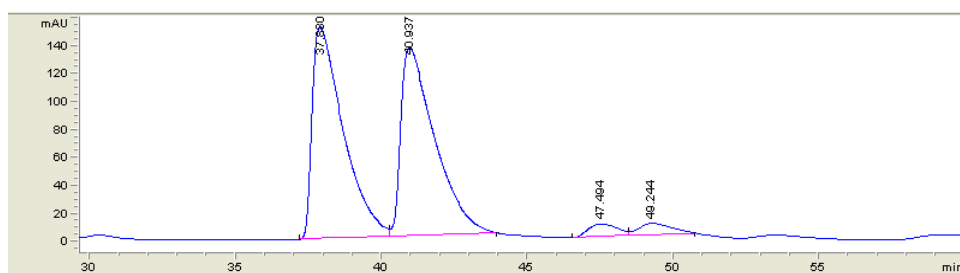
#	Time	Area	Height	Width	Area%	Symmetry
1	28.826	672.8	7.6	1.483	7.820	0
2	30.512	7930	72	1.8351	92.180	0.403



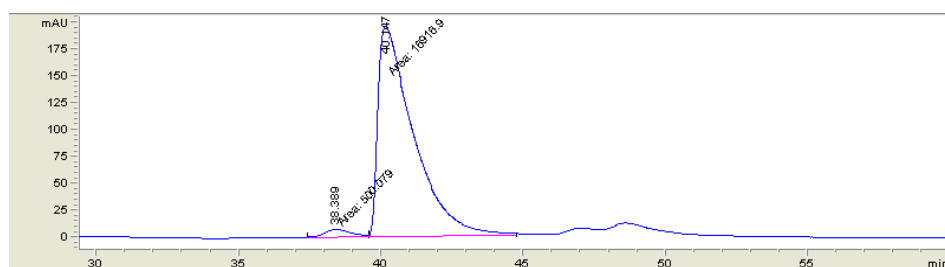
#	Time	Area	Height	Width	Area%	Symmetry
1	36.767	3258.8	26	2.0888	100.000	0.46

(2*S*,3*S*,4*R*)-4-Nitro-3-phenyl-2-(2-pyridinyl)pyrrolidine (*cis*-26)

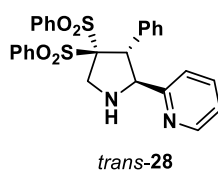
Racemic



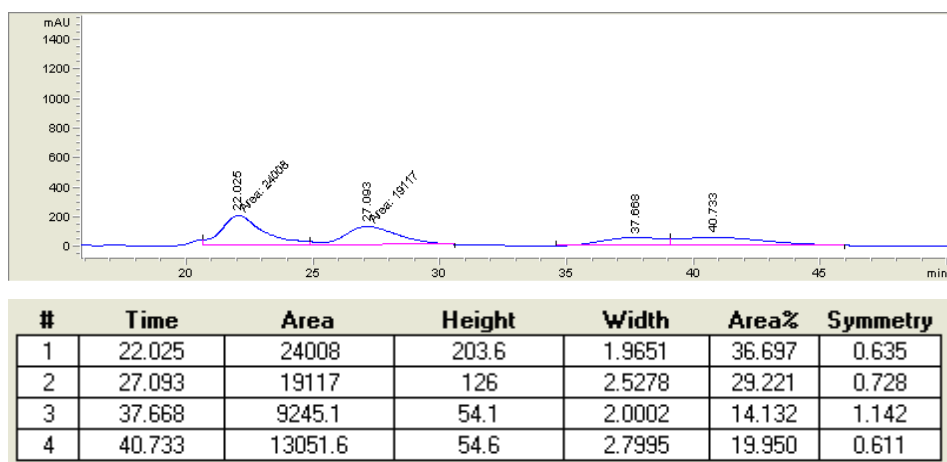
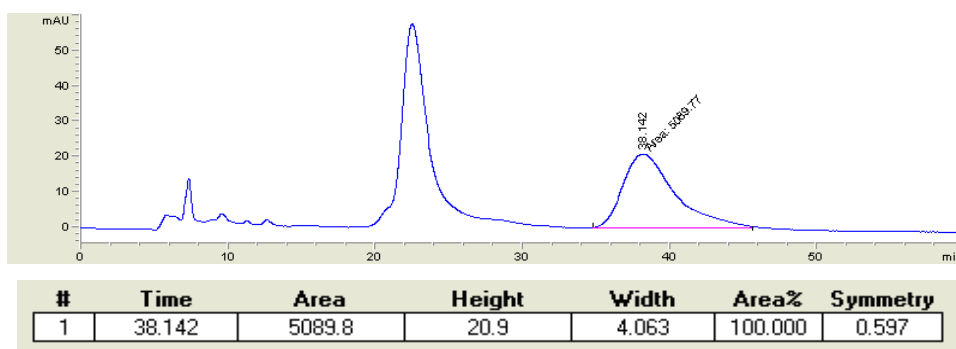
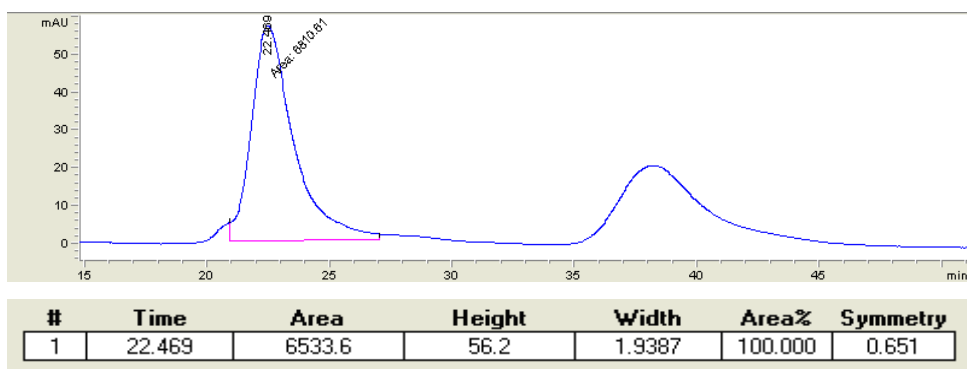
#	Time	Area	Height	Width	Area%	Symmetry
1	37.88	11187.6	151.7	1.0444	47.635	0.306
2	40.937	10972.3	134.9	1.1146	46.718	0.308
3	47.494	634.3	9.2	0.816	2.701	0.7
4	49.244	692	8.6	0.9498	2.946	0.638

(+)-*cis*-26: 94% ee

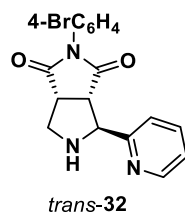
#	Time	Area	Height	Width	Area%	Symmetry
1	38.389	500.1	7.4	1.1213	2.871	0
2	40.147	16916.9	195.7	1.4409	97.129	0.254

(2*S*, 3*S*)-3-Phenyl-4,4-bis(phenylsulfonyl)-2-(2-pyridinyl)pyrrolidine (*trans*-28)

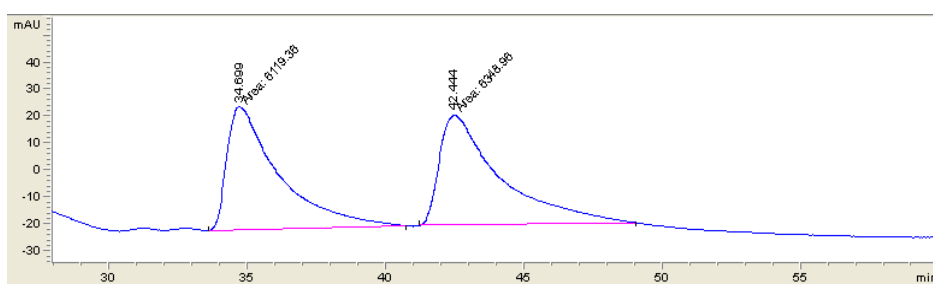
Racemic

**(+)-*trans*-28: ≥99% ee and ≥90% ee**

(3*aS*,4*S*,6*aR*)-2-(4-Bromophenyl)-4-(2-pyridinyl)tetrahydropyrrolo[3,4-*c*]pyrrole-1,3(2*H*,3*aH*)-dione (*trans*-32)

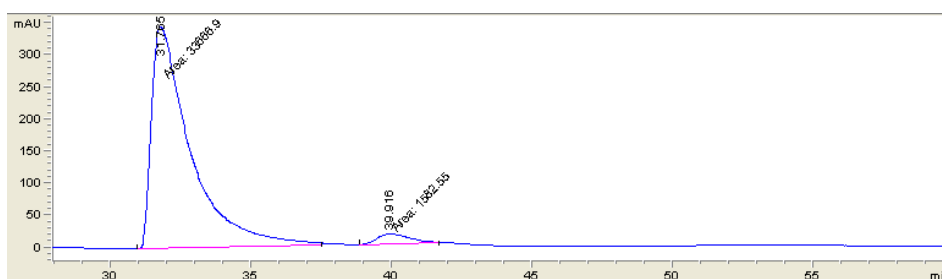


Racemic



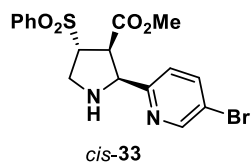
#	Time	Area	Height	Width	Area%	Symmetry
1	34.699	6119.4	46	2.2163	49.079	0.313
2	42.444	6349	40.9	2.5857	50.921	0.297

(+)-*trans*-32: 91% ee

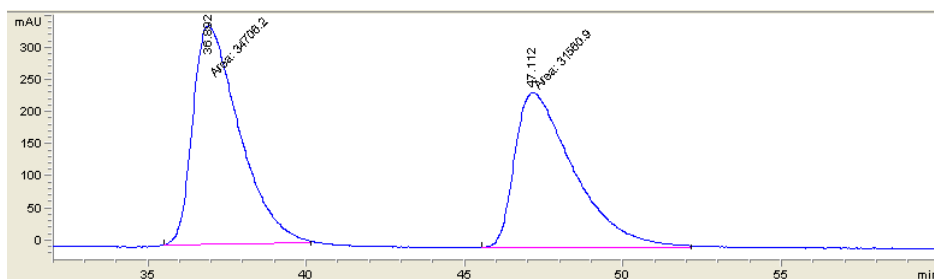


#	Time	Area	Height	Width	Area%	Symmetry
1	31.765	33666.9	345.9	1.6221	95.510	0.301
2	39.916	1582.6	17.5	1.5036	4.490	0.656

Methyl (2*S*,3*R*,4*R*)-2-(5-bromopyridin-2-yl)-4-(phenylsulfonyl)pyrrolidine-3-carboxylate
(*cis*-33)

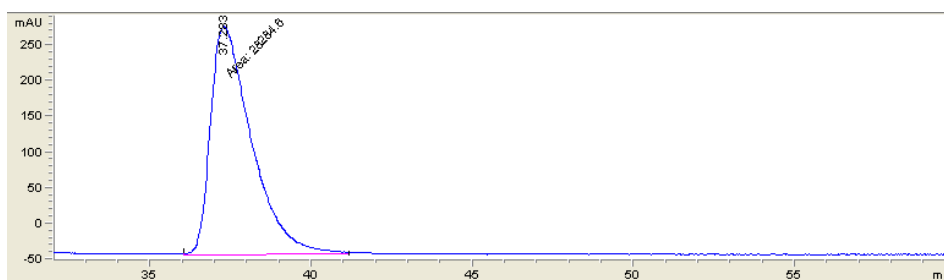


Racemic



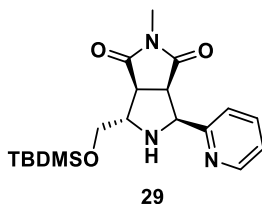
#	Time	Area	Height	Width	Area%	Symmetry
1	36.892	34706.2	340.5	1.6988	52.373	0.498
2	47.112	31560.9	242.3	2.1713	47.627	0.418

(-)-*cis*-33: $\geq 98\%$ ee

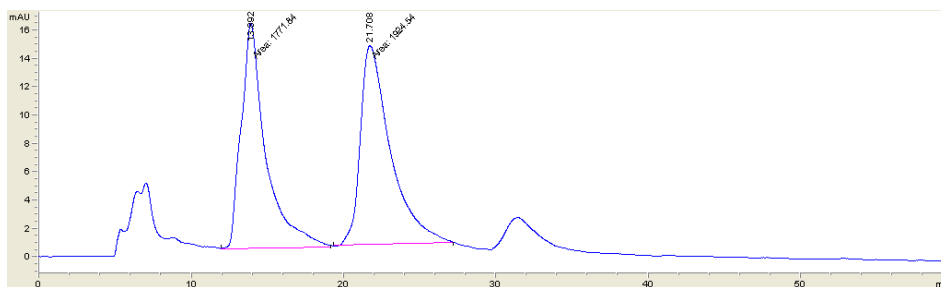


#	Time	Area	Height	Width	Area%	Symmetry
1	37.283	28284.6	319.5	1.4754	100.000	0.489

**(3*aS*,4*S*,6*S*,6*aR*)-4-(((*tert*-Butyldimethylsilyl)oxi)methyl)-2-methyl-6-(pyridin-2-yl)pyrrolidin
[3,4-*c*]pyrrol-1,3(2*H*,3*aH*)-dione (29)**

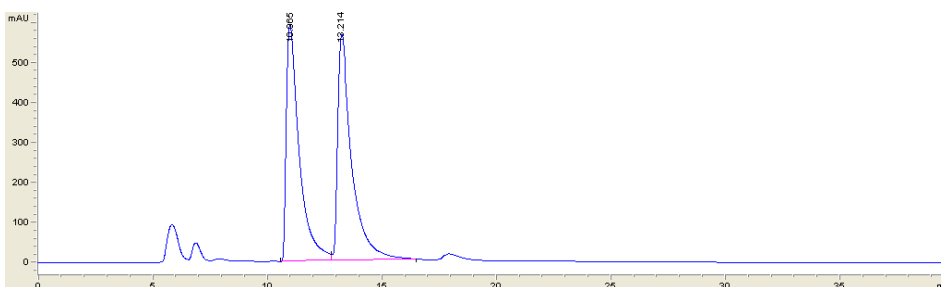


Racemic

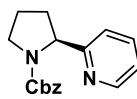


#	Time	Area	Height	Width	Area%	Symmetry
1	13.892	1771.8	15.9	1.8601	47.934	0.616
2	21.708	1924.5	14.1	2.2812	52.066	0.458

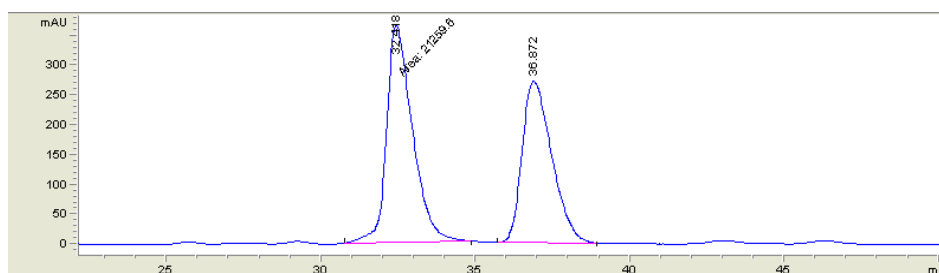
29: 0% ee



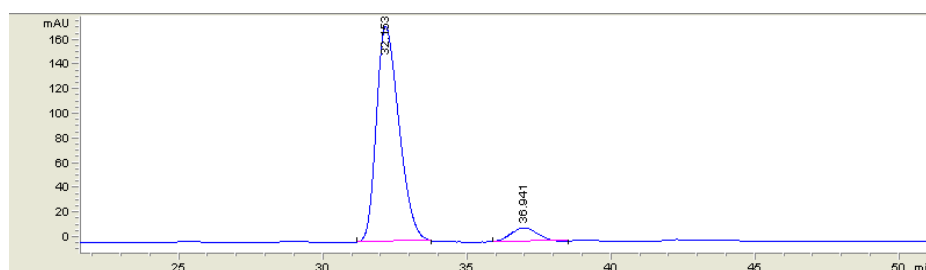
#	Time	Area	Height	Width	Area%	Symmetry
1	10.965	23187	592.8	0.5723	48.027	0.348
2	13.214	25091.6	565.5	0.6457	51.973	0.351

(S)-Benzyl 2-(2-pyridinyl)pyrrolidine-1-carboxylate (30)**30**

Racemic



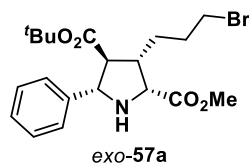
#	Time	Area	Height	Width	Area%	Symmetry
1	32.418	21259.6	363.2	0.9755	54.033	0.588
2	36.872	18086.2	271.5	0.9813	45.967	0.615

(-)-30: 87% ee

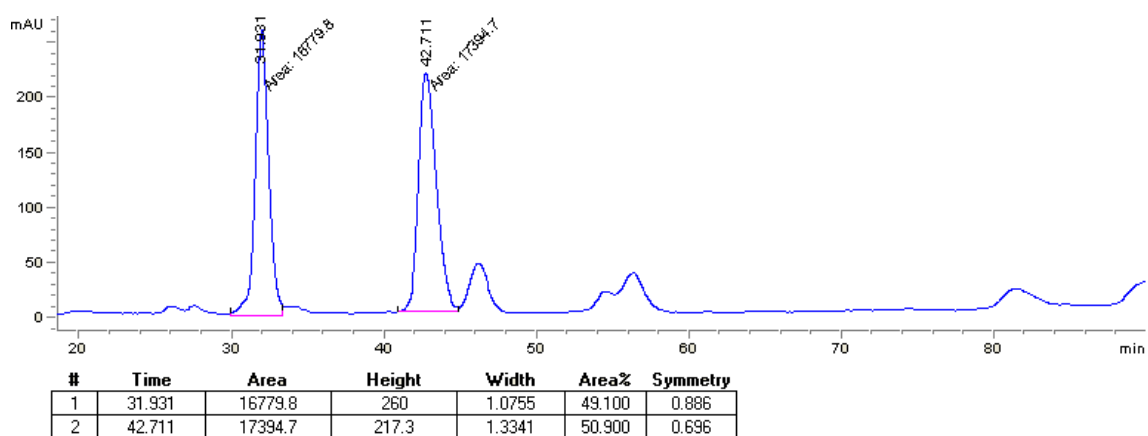
#	Time	Area	Height	Width	Area%	Symmetry
1	32.153	9513.8	174.5	0.7922	93.479	0.672
2	36.941	663.7	10.8	0.7211	6.521	0.955

Capítulo 3: Catalytic asymmetric synthesis of azabicycles by 1,3-dipolar cycloaddition/intramolecular alkylation

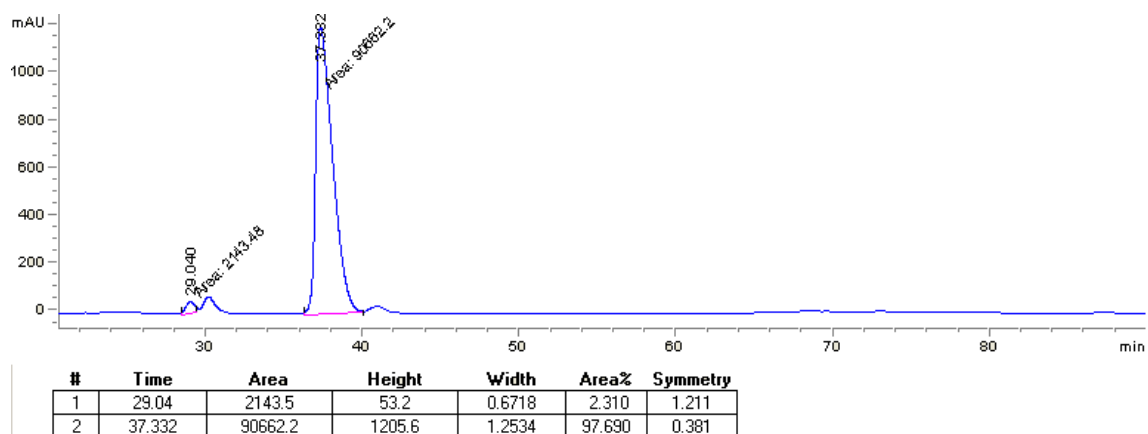
(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-phenylpyrrolidine-2,4-dicarboxylate (*exo*-57a)



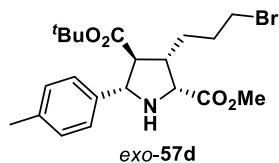
Racemic



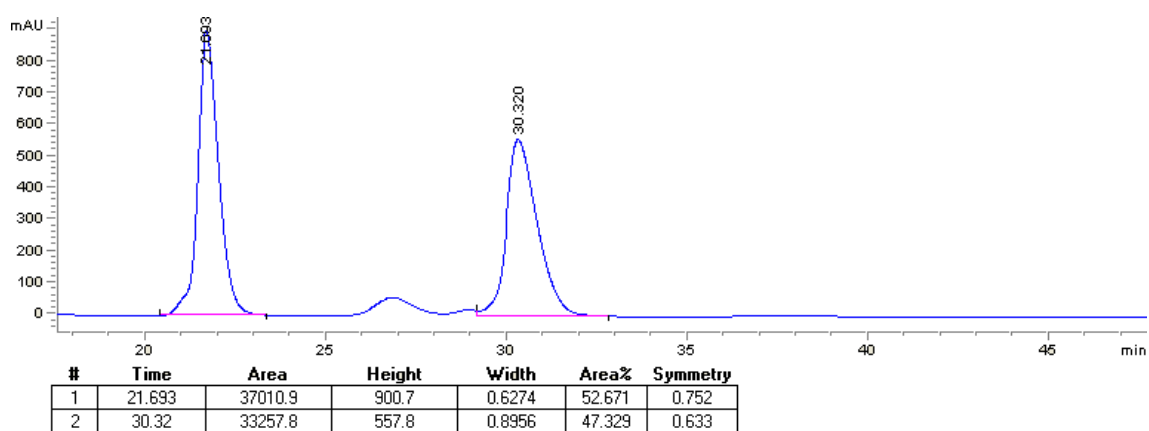
(-)-*exo*-57a: 95% *ee*



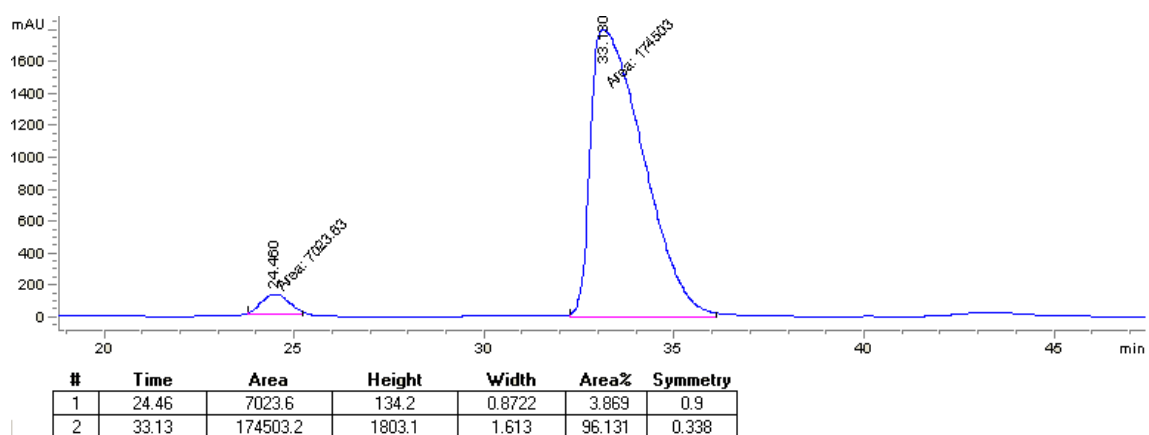
(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-(4-methylphenyl)pyrrolidine-2,4-dicarboxylate (*exo*-57d)

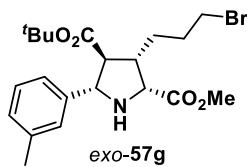


Racemic

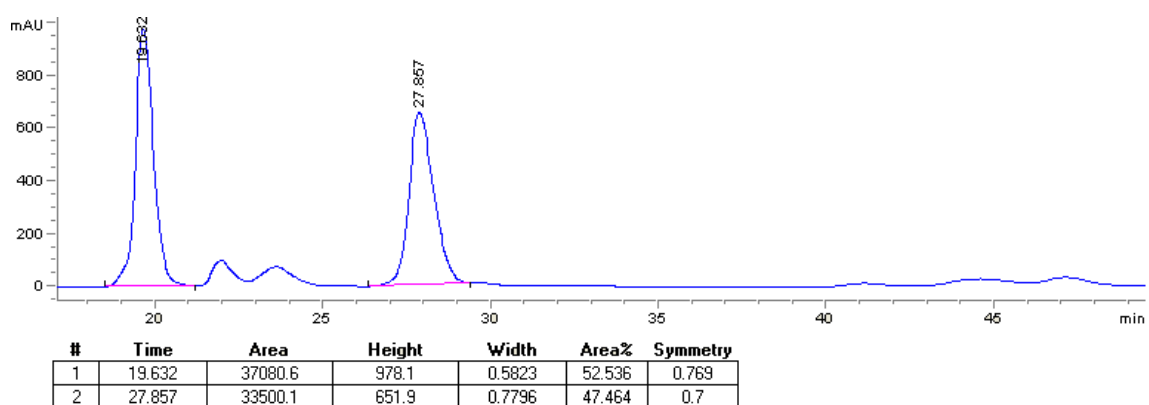
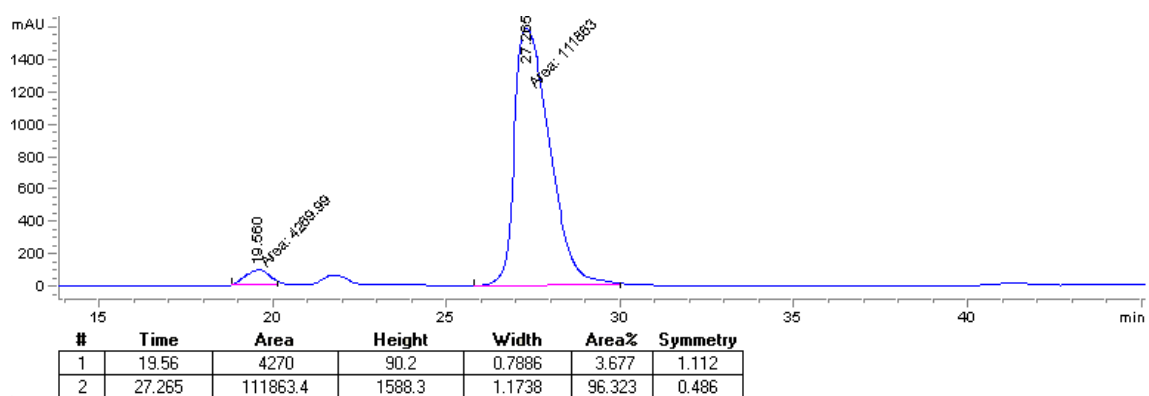


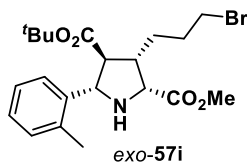
(-)-*exo*-57d: 92% ee



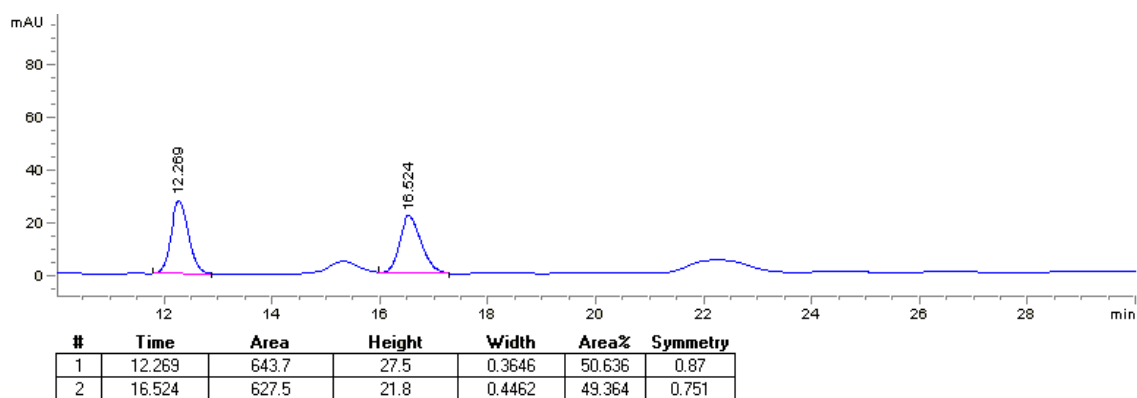
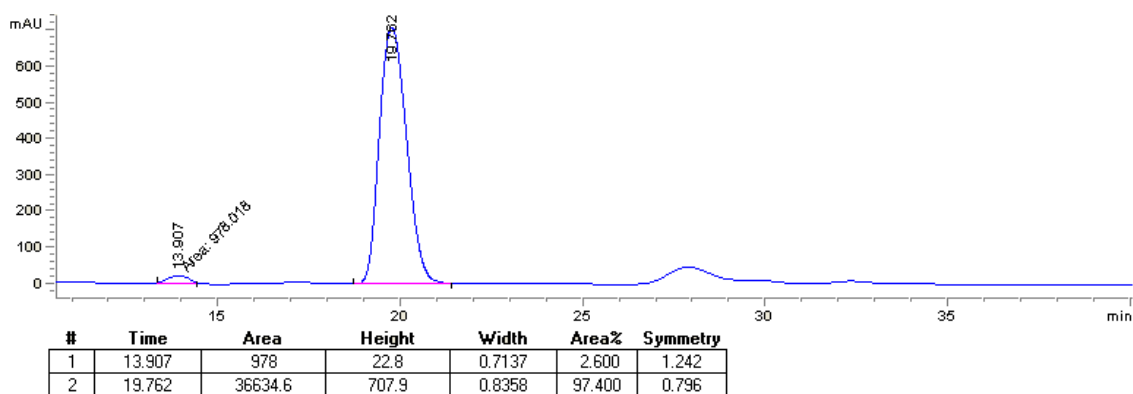
(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-(3-methylphenyl)pyrrolidine-2,4-dicarboxylate (*exo*-57g)

Racemic

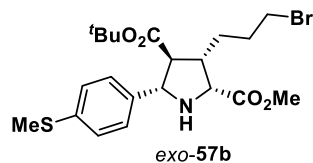
(-)-*exo*-57g: 93% ee

(2R, 3S, 4S, 5S)-4-tert-Butyl 2-methyl 3-(3-bromopropyl)-5-(2-methylphenyl)pyrrolidine-2,4-dicarboxylate (exo-57i)

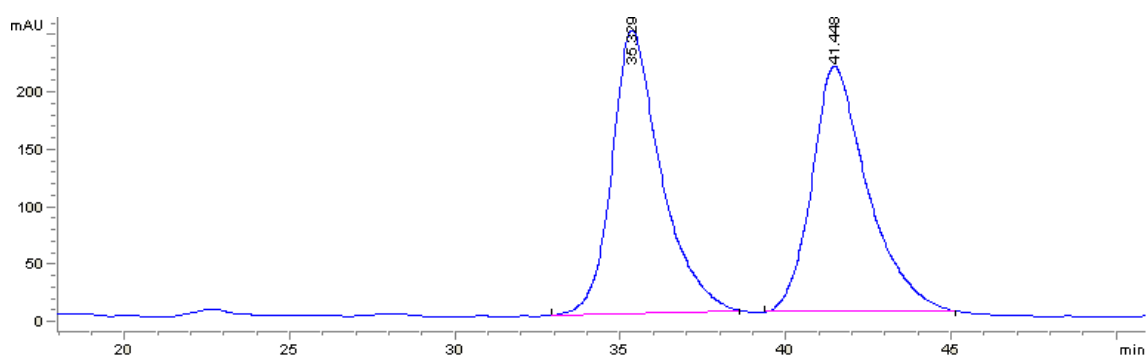
Racemic

**(-)-exo-57i: 95% ee**

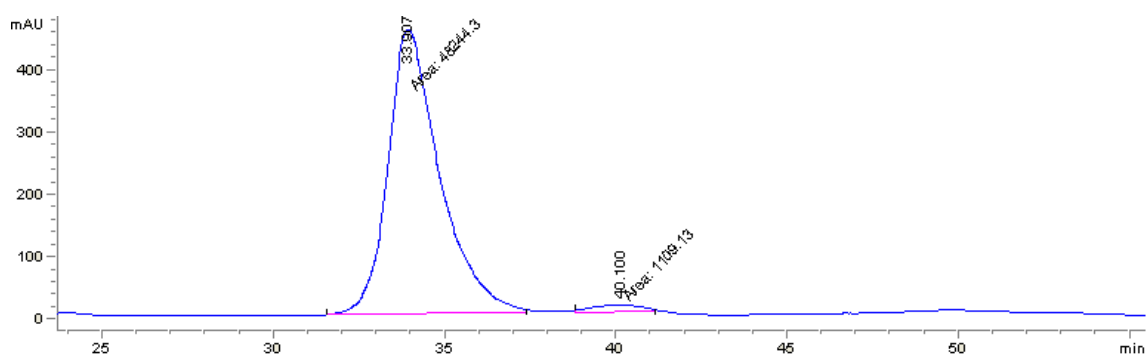
(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-(4-(methylthio)phenyl)pyrrolidine-2,4-dicarboxylate (*exo*-57b)



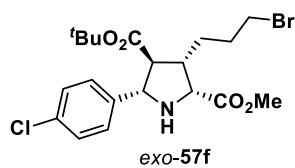
Racemic



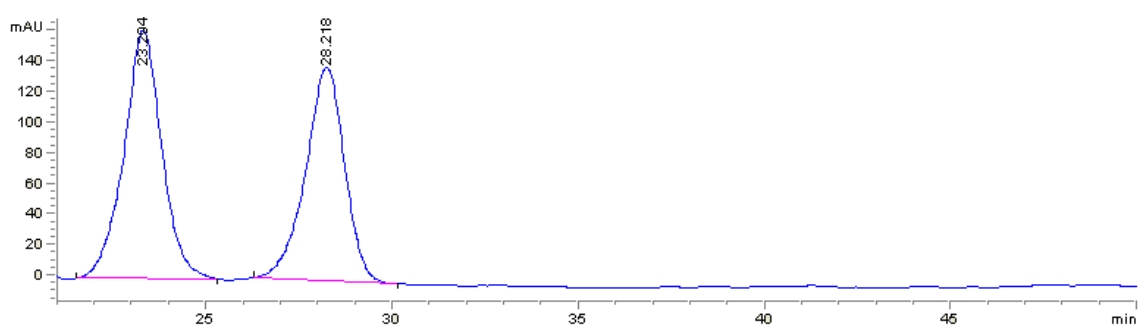
(-)-*exo*-57b: 96% *ee*



(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-(4-chlorophenyl)pyrrolidine-2,4-dicarboxylate (*exo*-57f)

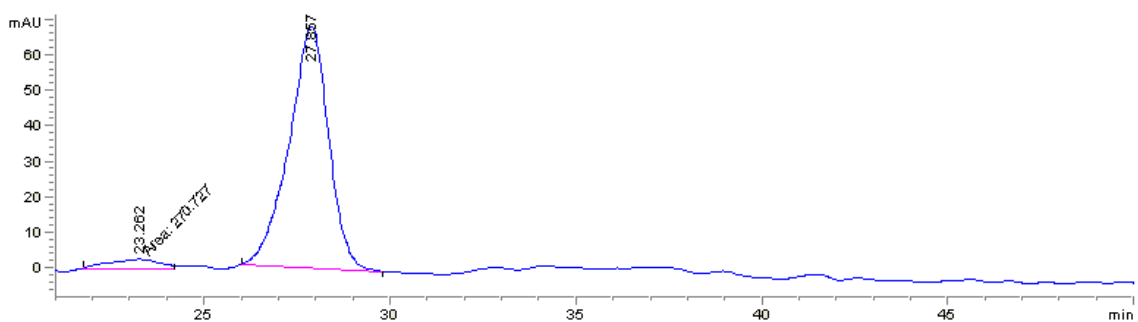


Racemic



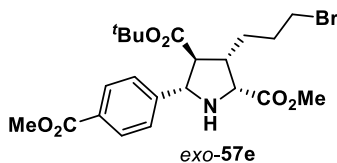
#	Time	Area	Height	Width	Area%	Symmetry
1	23.294	11623	162.7	1.0412	53.222	1.018
2	28.218	10215.7	140.2	1.0762	46.778	1.154

(-)-*exo*-57f: 90% ee

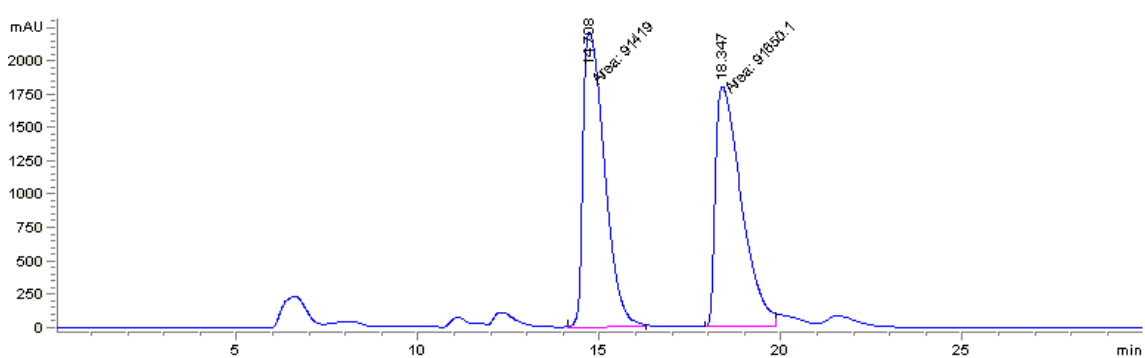


#	Time	Area	Height	Width	Area%	Symmetry
1	23.262	270.7	2.8	1.6315	5.051	1.578
2	27.857	5088.6	68.1	1.0932	94.949	1.251

(2*R*, 3*S*, 4*S*, 5*S*)-4-*tert*-Butyl 2-methyl 3-(3-bromopropyl)-5-(4-(methoxycarbonyl) phenyl) pyrrolidine-2,4-dicarboxylate (*exo*-57e)

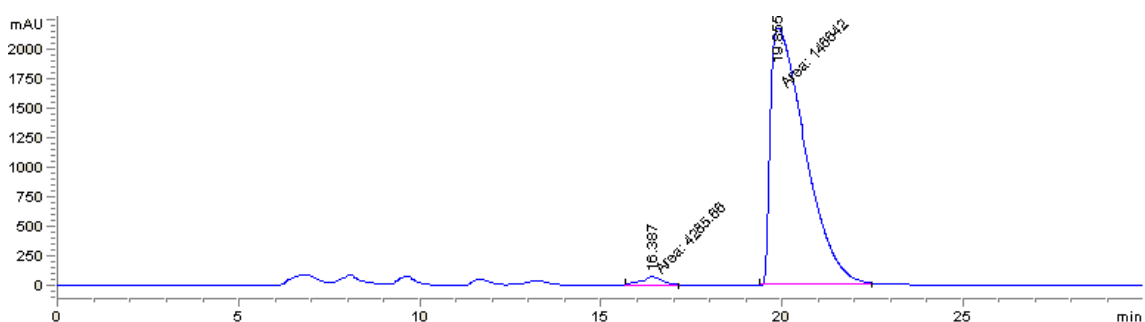


Racemic



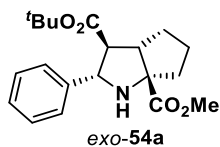
#	Time	Area	Height	Width	Area%	Symmetry
1	14.708	91419	2221.9	0.6857	49.937	0.426
2	18.347	91650.1	1808.5	0.8446	50.063	0.335

(+)-*exo*-57e: 94% ee

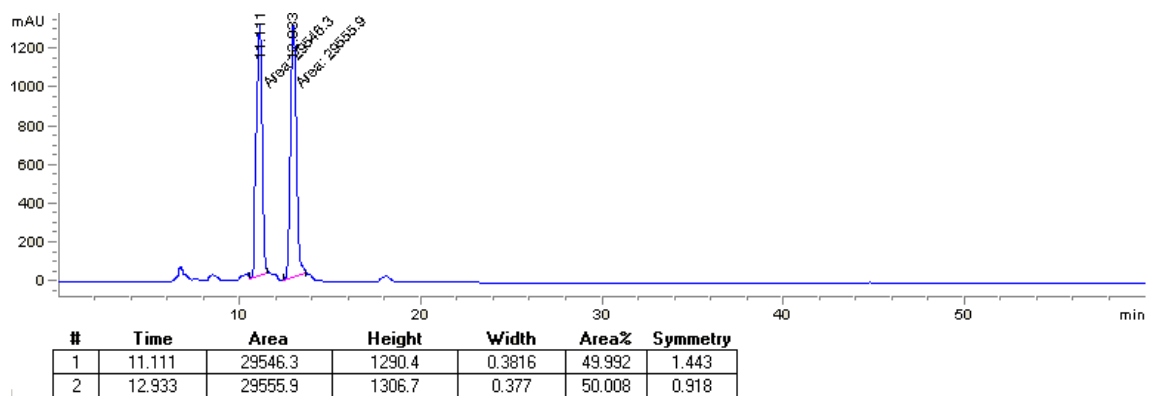


#	Time	Area	Height	Width	Area%	Symmetry
1	16.387	4285.7	84.8	0.8427	2.840	1.093
2	19.855	146641.6	2177.7	1.1223	97.160	0.257

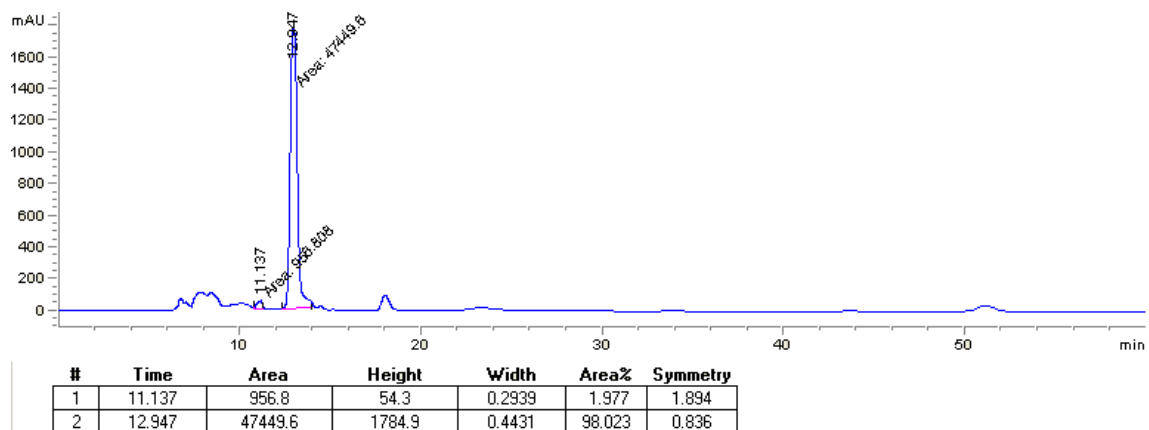
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-phenyloctahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54*a*)



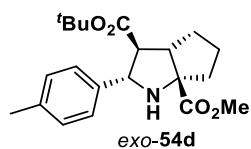
Racemic



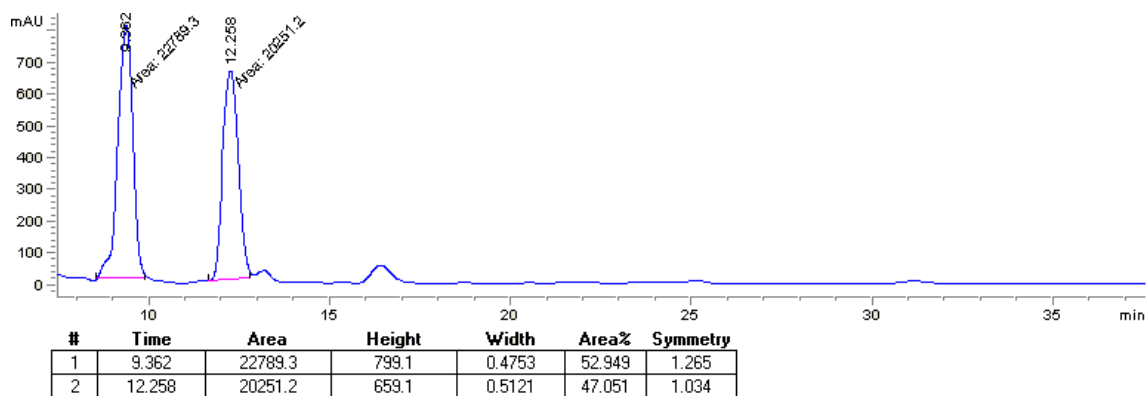
(+)-*exo*-54*a*: 96% *ee*



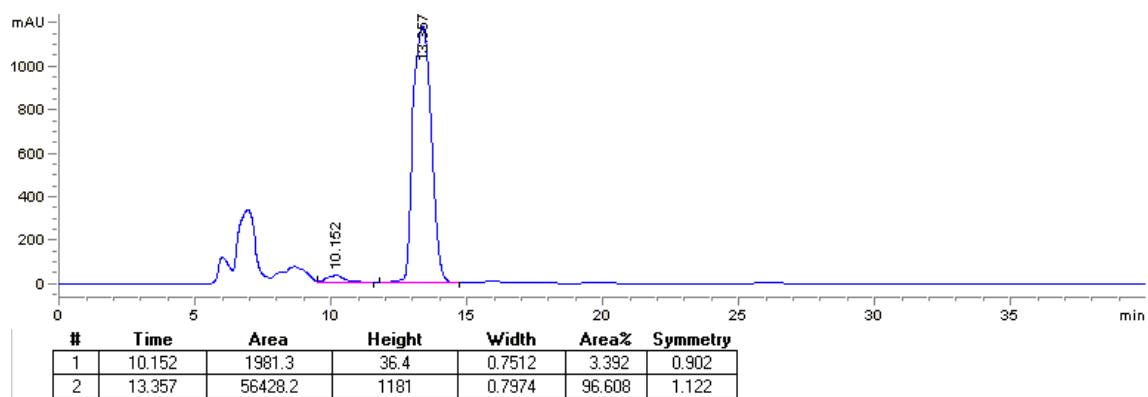
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(4-methylphenyl)octahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54d)



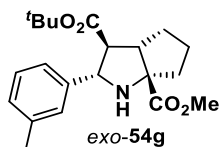
Racemic



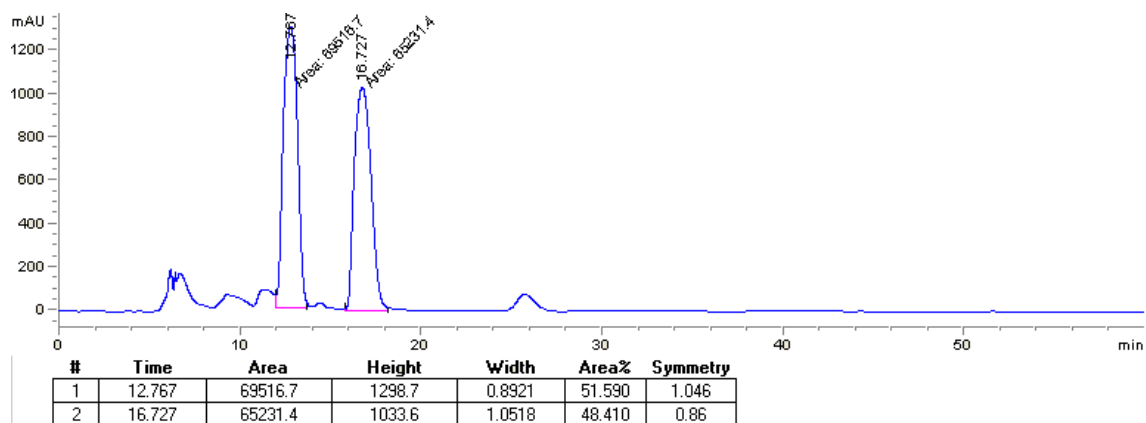
(-)-*exo*-54d: 93% *ee*



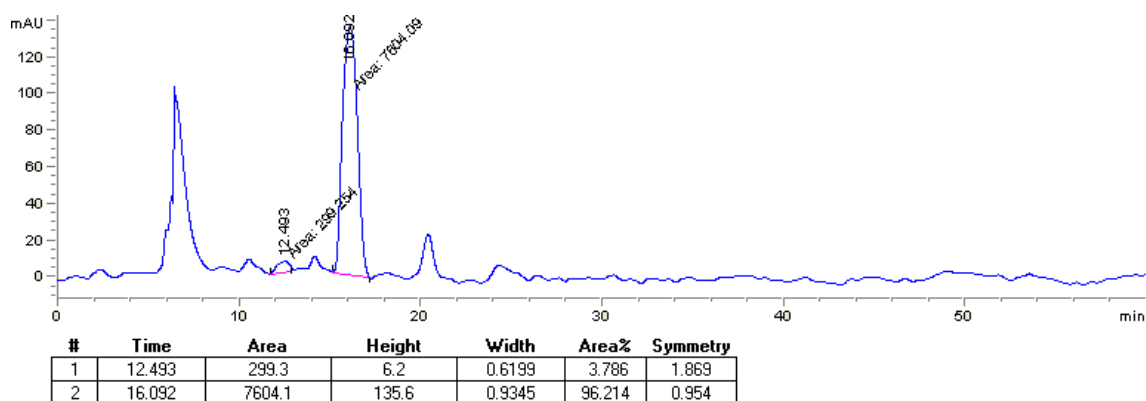
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(3-methylphenyl)octahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54g)



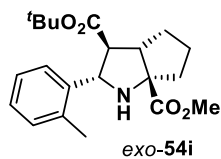
Racemic



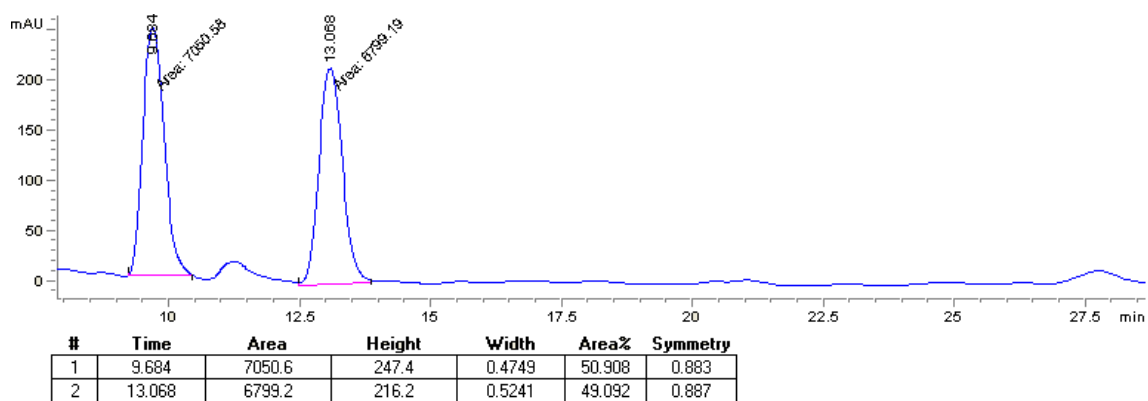
(-)-*exo*-54g: 92% ee



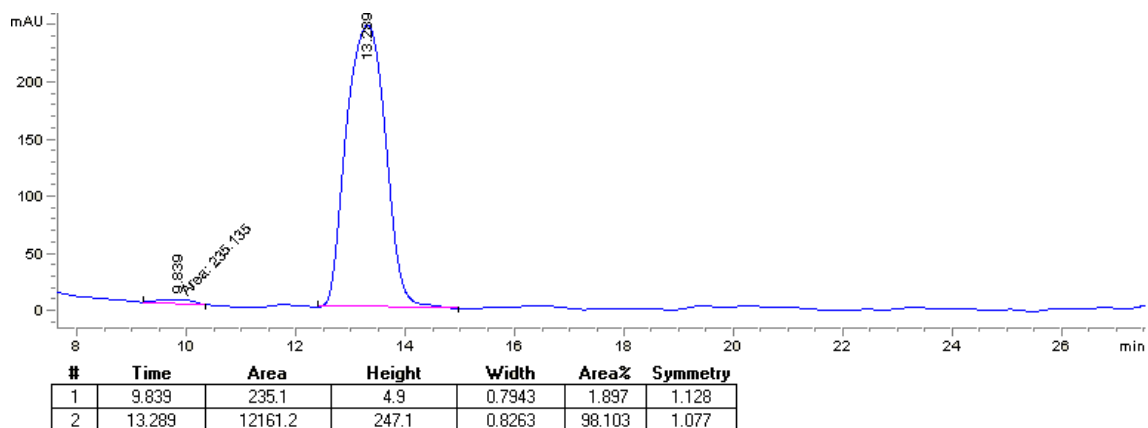
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(2-methylphenyl)octahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54i)



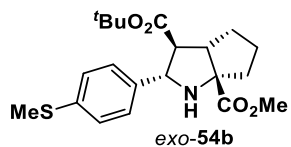
Racemic



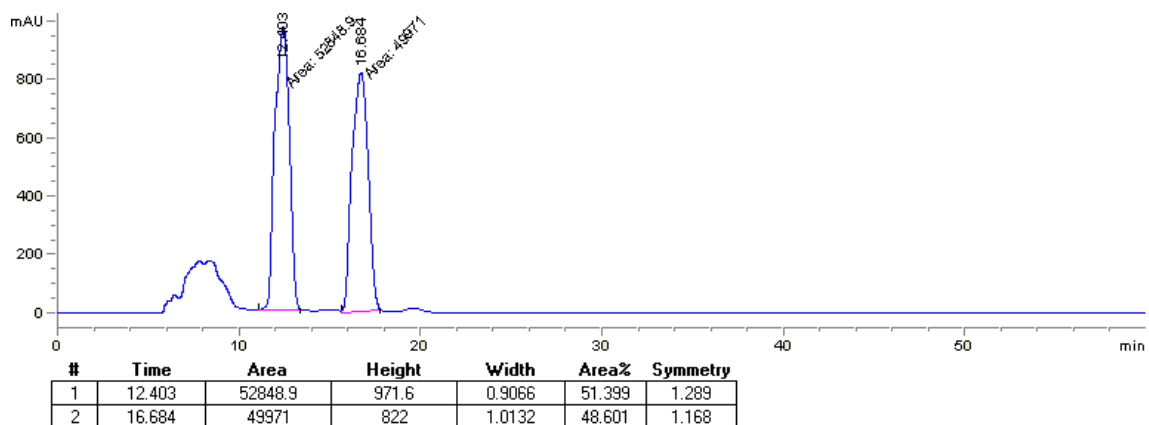
(-)-*exo*-54i: 96% *ee*



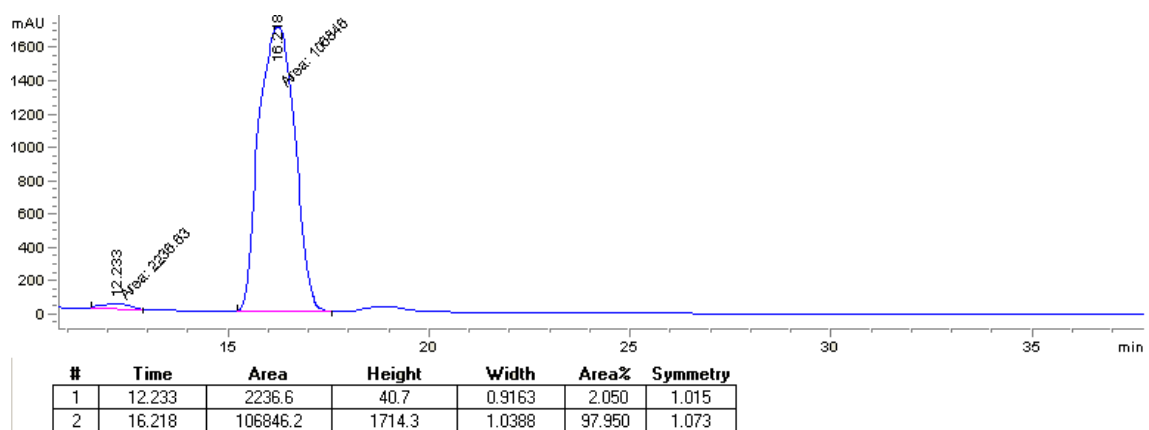
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(4-(methylthio)phenyl)octahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54b)



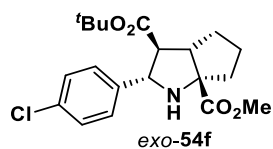
Racemic



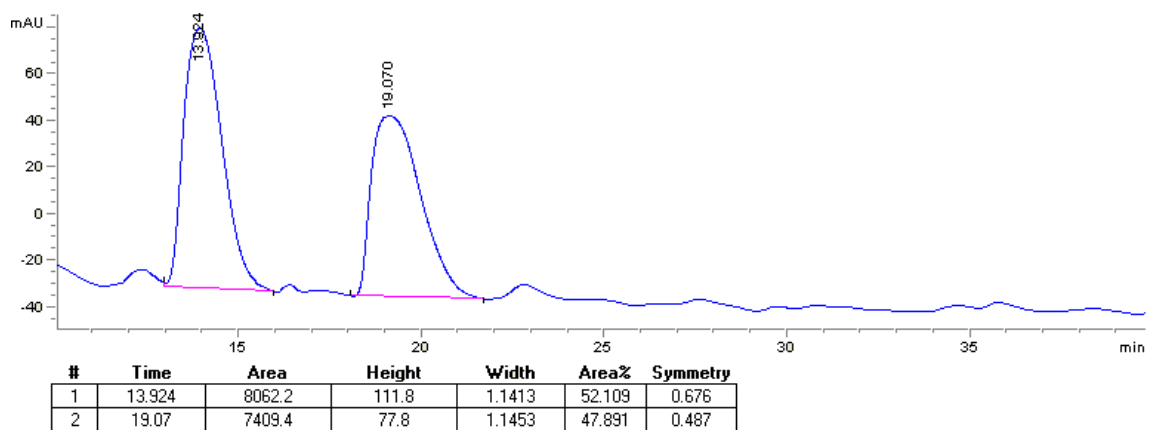
(-)-*exo*-54b: 96% *ee*



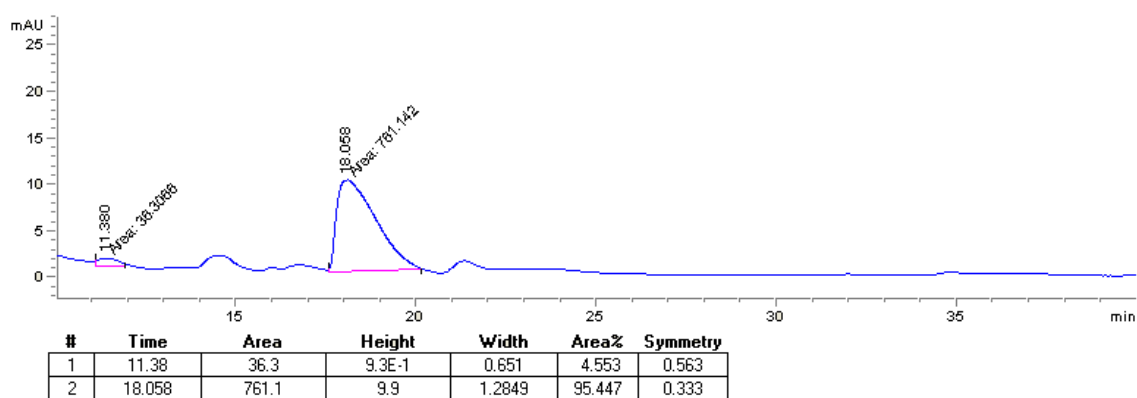
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(4-chlorophenyl)octahydrocyclopenta[*b*]pyrrole-3,6*a*-dicarboxylate (*exo*-54f)



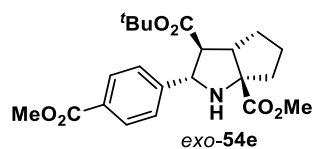
Racemic



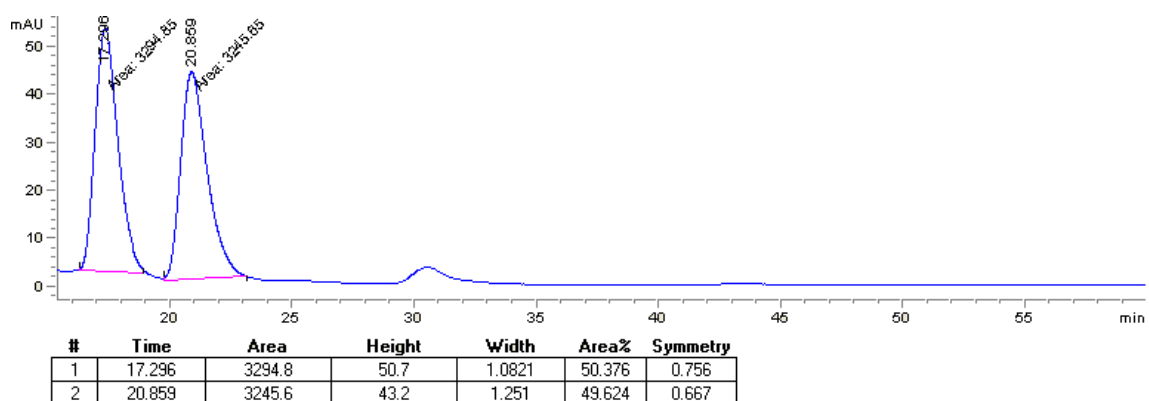
(-)-*exo*-54f: 90% *ee*



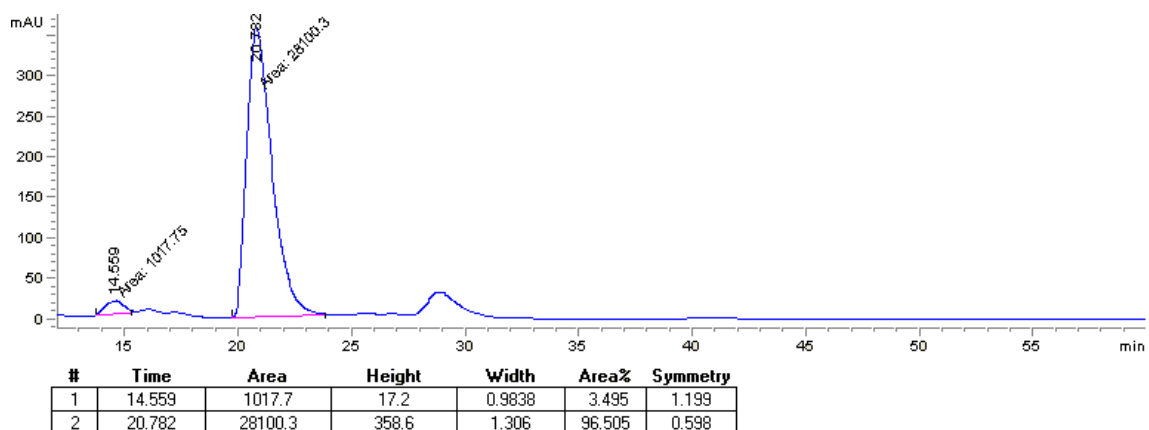
(2*S*, 3*S*, 3*aS*, 6*aS*)-3-*tert*-Butyl 6*a*-methyl 2-(4-(methoxycarbonyl)phenyl)octahydrocyclopenta [b]pyrrole-3,6*a*-dicarboxylate (*exo*-54*e*)



Racemic

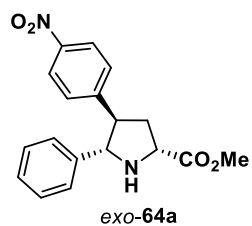


(-)-*exo*-54*e*: 93% *ee*

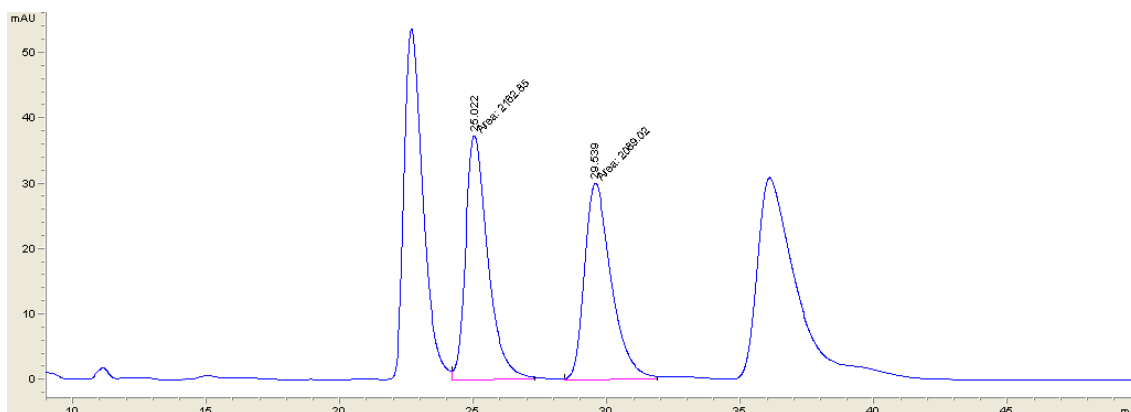


Capítulo 4: Alkenylarenes as dipolarophiles in catalytic asymmetric 1,3-dipolar cycloadditions of azomethine ylides

(2*R*,4*R*,5*S*)-Methyl 4-(4-Nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (*exo*-64a)

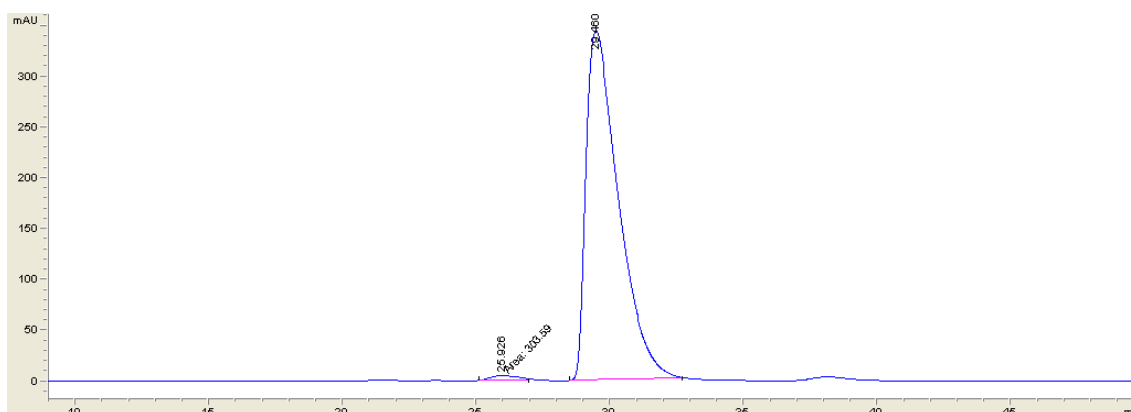


Racemic *exo* + *endo*



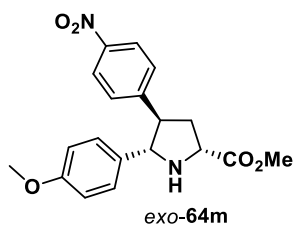
#	Time	Area	Height	Width	Area%	Symmetry
1	25.022	2162.9	37.3	0.9656	50.868	0.655
2	29.539	2089	30.1	1.1583	49.132	0.636

(+)-*exo*-64a: 98% *ee*

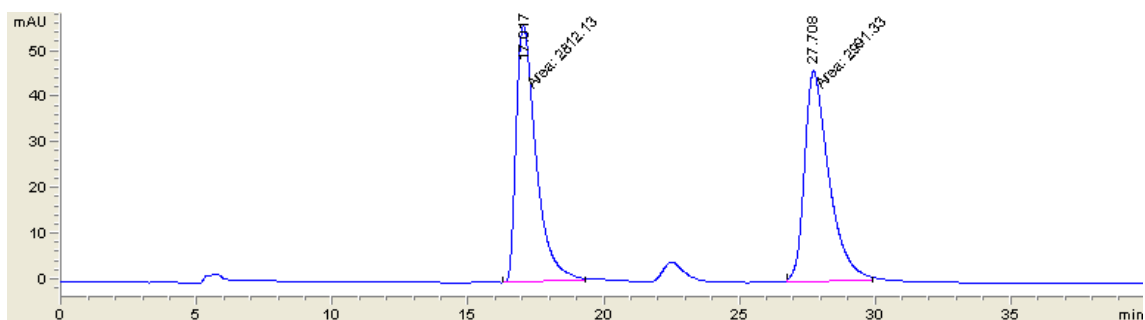


#	Time	Area	Height	Width	Area%	Symmetry
1	25.926	303.6	4.2	1.2056	1.037	0.626
2	29.46	28986	343.4	1.2366	98.963	0.399

(2*R*,4*R*,5*S*)-Methyl 5-(4-methoxyphenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate
(*exo*-64m)

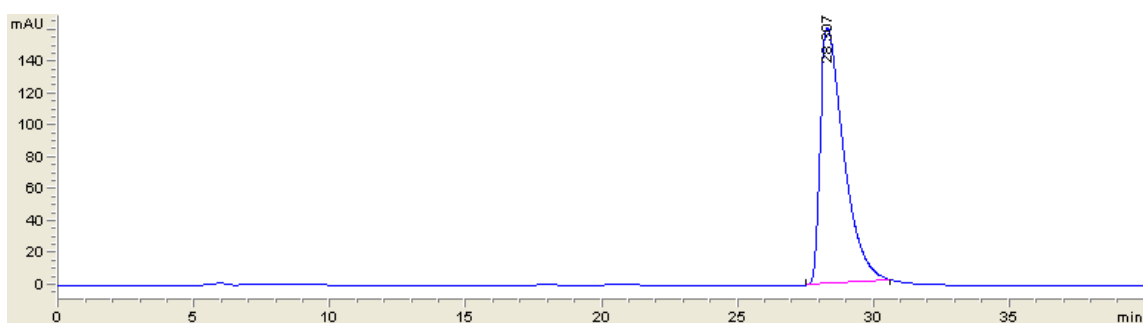


Racemic

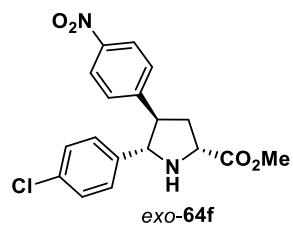


#	Time	Area	Height	Width	Area%	Symmetry
1	17.017	2812.1	56.1	0.836	48.456	0.537
2	27.708	2991.3	46.4	1.0748	51.544	0.583

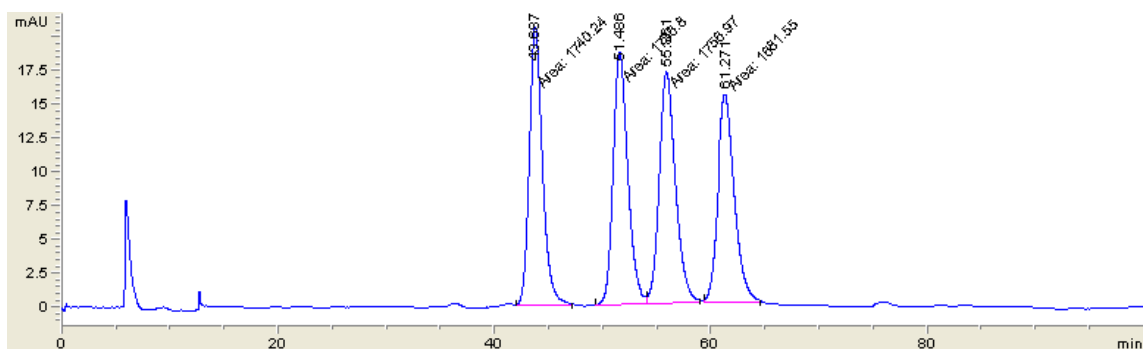
(+)-*exo*-64m: $\geq 98\%$ ee



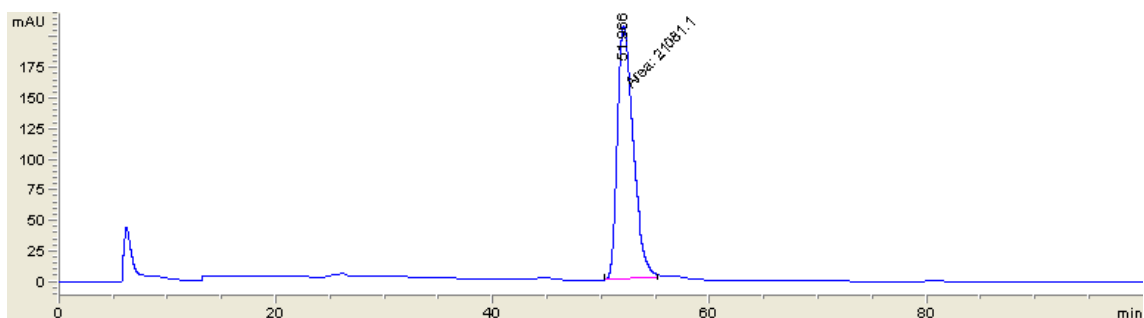
#	Time	Area	Height	Width	Area%	Symmetry
1	28.307	9934.6	160.8	0.9307	100.000	0.456

(2R,4R,5S)-Methyl 5-(4-chlorophenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (exo-64f)

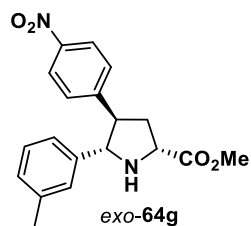
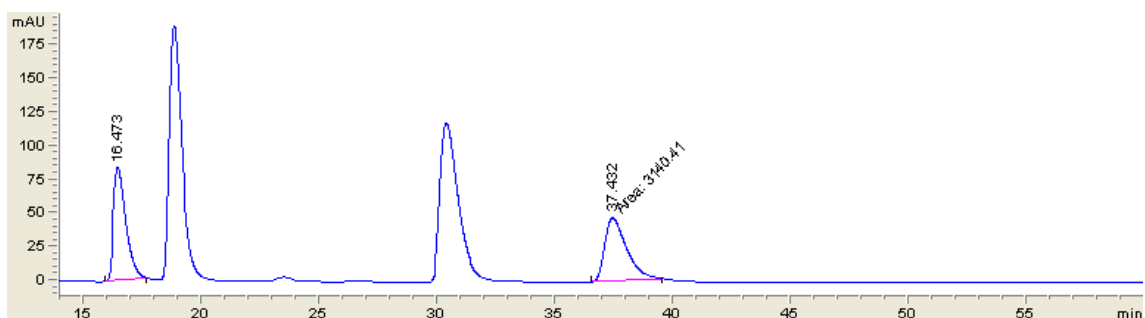
Racemic



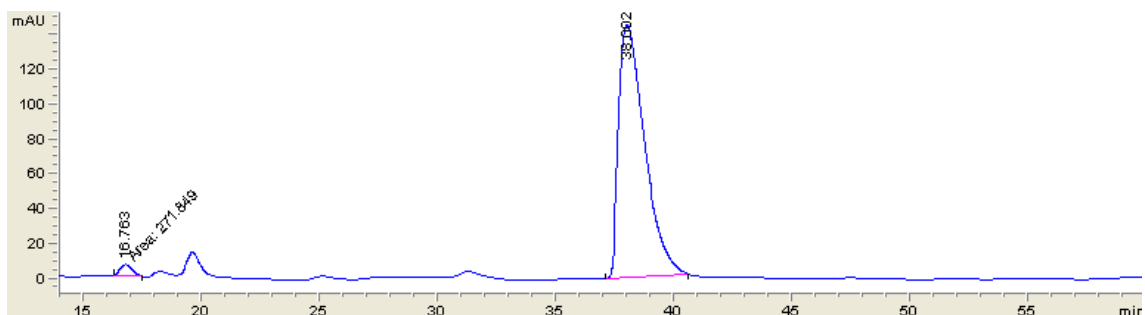
#	Time	Area	Height	Width	Area%	Symmetry
1	43.687	1740.2	20.7	1.4001	25.164	0.766
2	51.486	1736.8	18.7	1.5497	25.114	0
3	55.861	1757	17.1	1.7112	25.406	0.779
4	61.271	1681.5	15.4	1.8149	24.315	0.772

(+)-exo-64f: $\geq 98\%$ ee

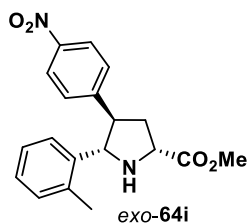
#	Time	Area	Height	Width	Area%	Symmetry
1	51.966	21081.1	206.9	1.6981	100.000	0.609

(2R,4R,5S)-Methyl 4-(4-nitrophenyl)-5-(*m*-tolyl)pyrrolidine-2-carboxylate (*exo*-64g)Racemic *exo* + *endo*

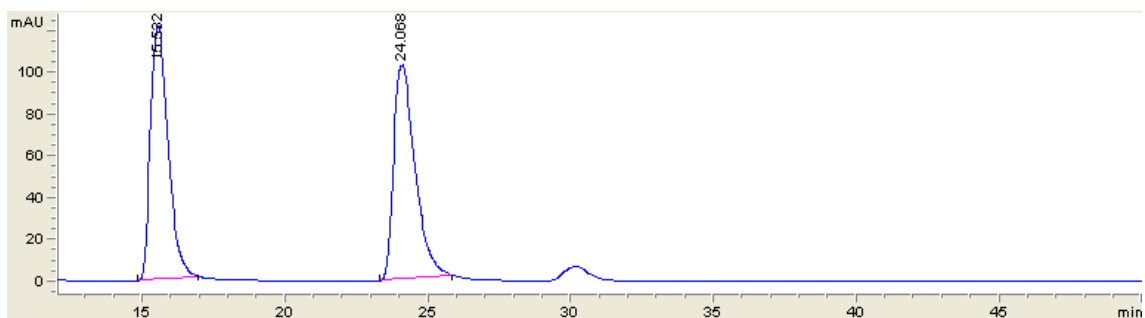
#	Time	Area	Height	Width	Area%	Symmetry
1	16.473	3129.3	84	0.5705	49.911	0.562
2	37.432	3140.4	47.9	1.0936	50.089	0.553

(+)-*exo*-64g: 95% ee (+ minor *endo*-64g)

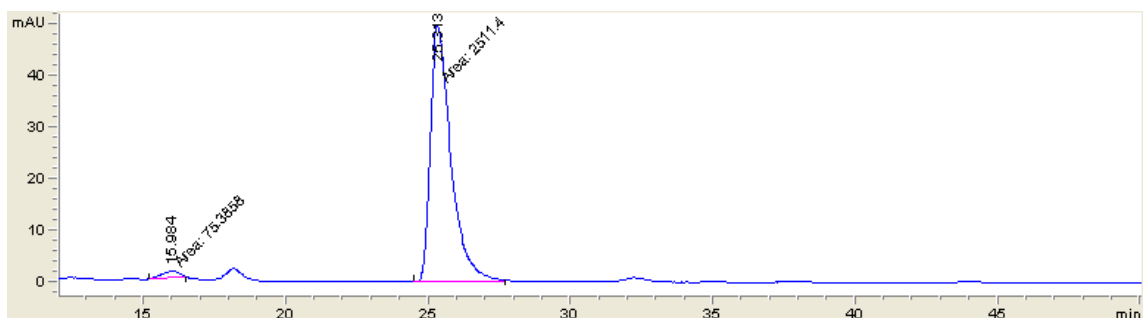
#	Time	Area	Height	Width	Area%	Symmetry
1	16.763	271.8	7.2	0.631	2.404	0.733
2	38.002	11038.1	145.6	1.1567	97.596	0.437

(2R,4R,5S)-Methyl 4-(4-nitrophenyl)-5-(*o*-tolyl)pyrrolidine-2-carboxylate (*exo*-64i)

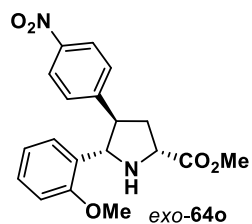
Racemic



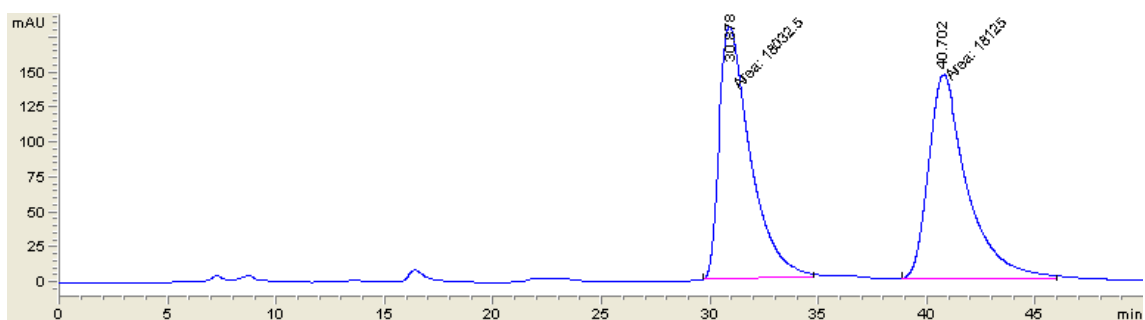
#	Time	Area	Height	Width	Area%	Symmetry
1	15.532	5276.1	121.6	0.6782	49.504	0.702
2	24.068	5381.9	102.8	0.8086	50.496	0.575

(+)-exo-64i: 94% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	15.984	75.4	1.6	0.797	2.914	1.467
2	25.313	2511.4	49.9	0.8389	97.086	0.534

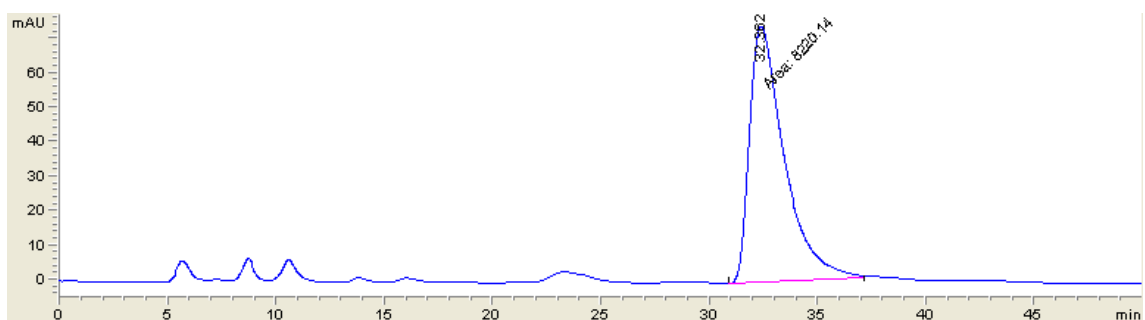
(2*R*,4*R*,5*S*)-Methyl 5-(*o*-methoxyphenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (*exo*-64o)

Racemic

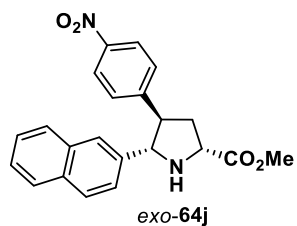


#	Time	Area	Height	Width	Area%	Symmetry
1	30.878	18032.5	179.9	1.6706	49.872	0.503
2	40.702	18125	146	2.0688	50.128	0.584

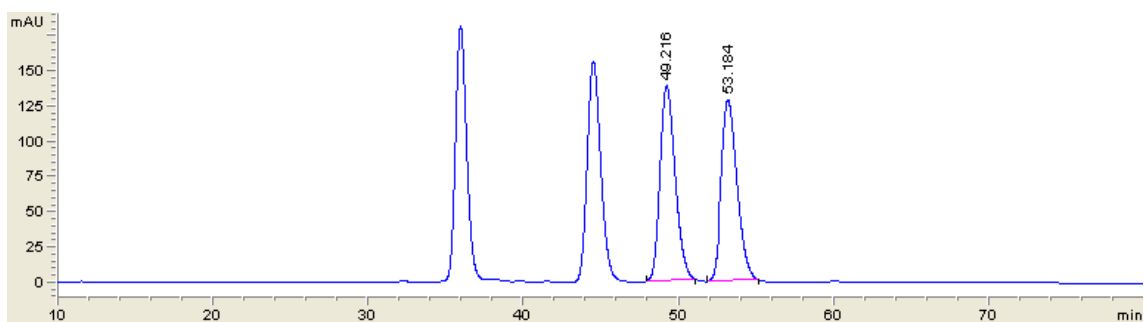
(+)-*exo*-64o: $\geq 98\%$ ee



#	Time	Area	Height	Width	Area%	Symmetry
1	32.362	8220.1	74.2	1.8461	100.000	0.479

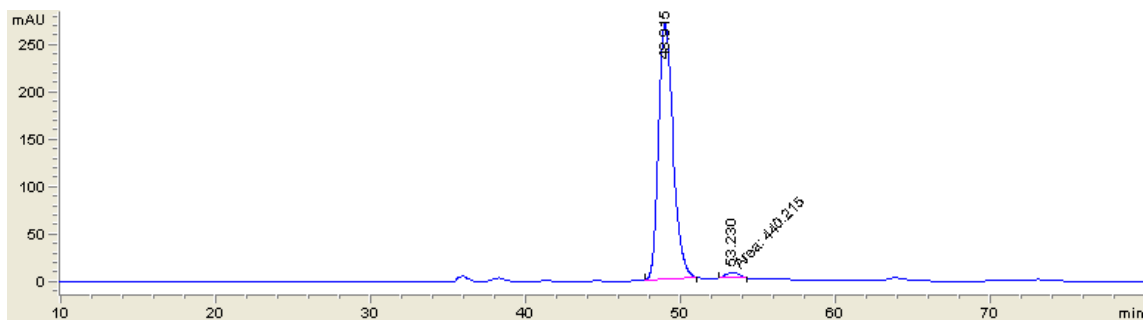
(2*R*,4*R*,5*S*)-Methyl 5-(naphthalen-2-yl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (*exo*-64j)

Racemic *exo* + *endo*

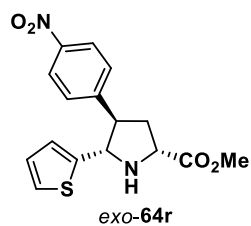
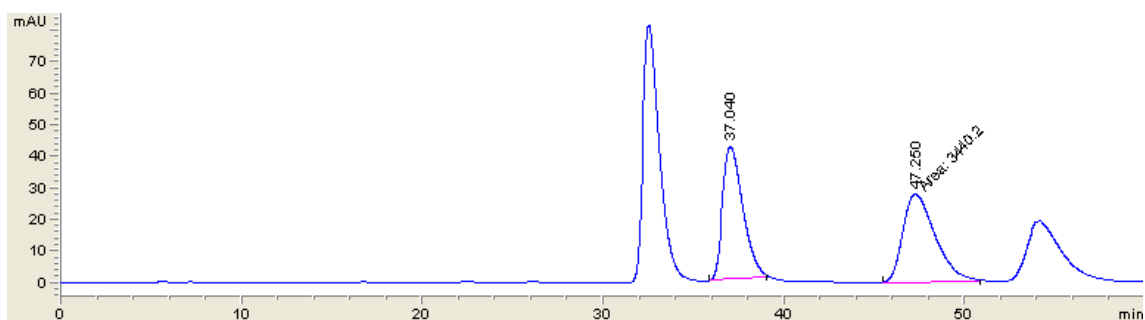


#	Time	Area	Height	Width	Area%	Symmetry
1	49.216	9299	138.4	1.0359	50.231	0.736
2	53.184	9213.5	128.4	1.1051	49.769	0.733

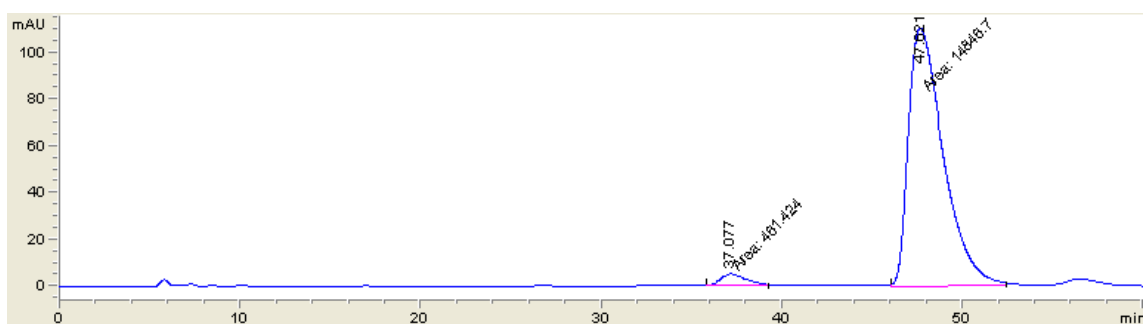
(+)-*exo*-64j: 95% *ee*



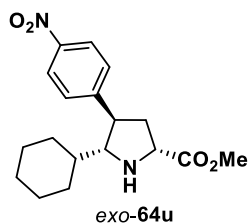
#	Time	Area	Height	Width	Area%	Symmetry
1	48.915	18184.3	269.8	1.0322	97.636	0.682
2	53.23	440.2	6.6	1.1072	2.364	0.86

(2R,4R,5S)-Methyl 4-(4-nitrophenyl)-5-(thiophen-2-yl)pyrrolidine-2-carboxylate (exo-64r)Racemic *exo* + *endo*

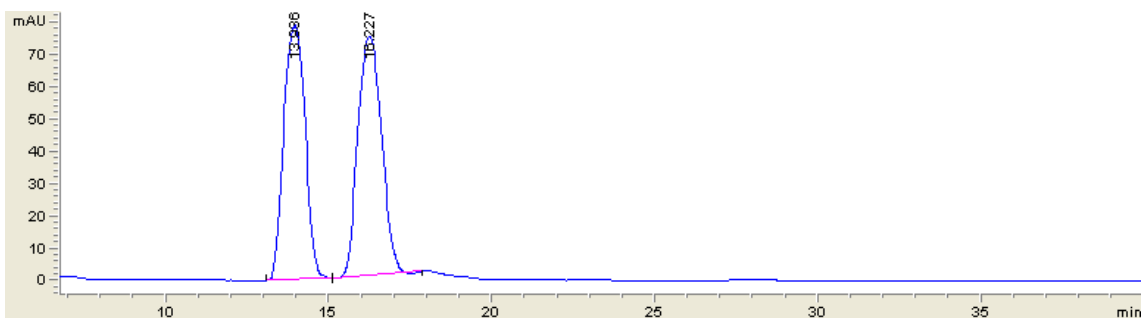
#	Time	Area	Height	Width	Area%	Symmetry
1	37.04	3328.5	42.3	1.1647	49.175	0.641
2	47.25	3440.2	27.9	2.0523	50.825	0.619

(+)-exo-64r: 94% ee

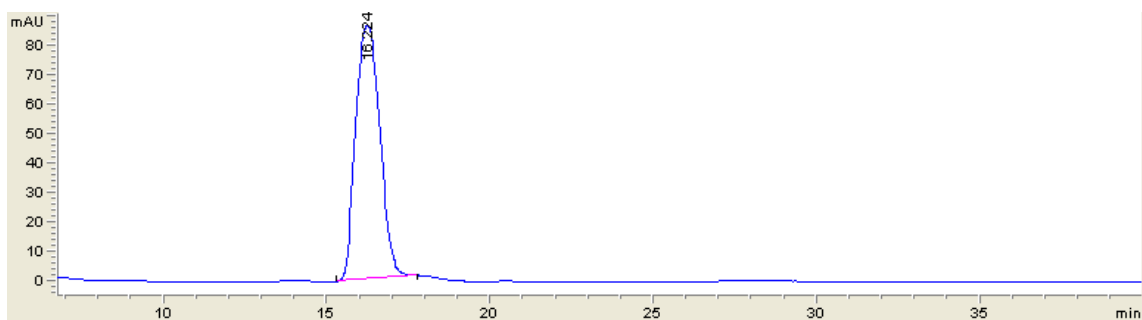
#	Time	Area	Height	Width	Area%	Symmetry
1	37.077	461.4	4.8	1.606	3.014	0.573
2	47.621	14846.7	110.4	2.2404	96.986	0.487

(2R,4R,5S)-Methyl 5-(cyclohexyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (exo-64u)

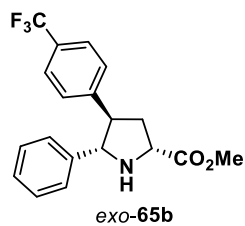
Racemic



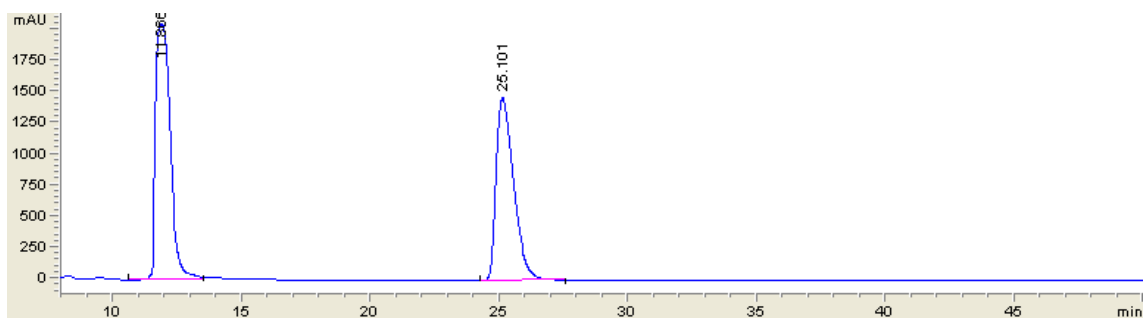
#	Time	Area	Height	Width	Area%	Symmetry
1	13.936	3582	78.9	0.7595	48.700	0.998
2	16.227	3773.2	73.9	0.8395	51.300	0.91

(+)-exo-64u: $\geq 98\%$ ee

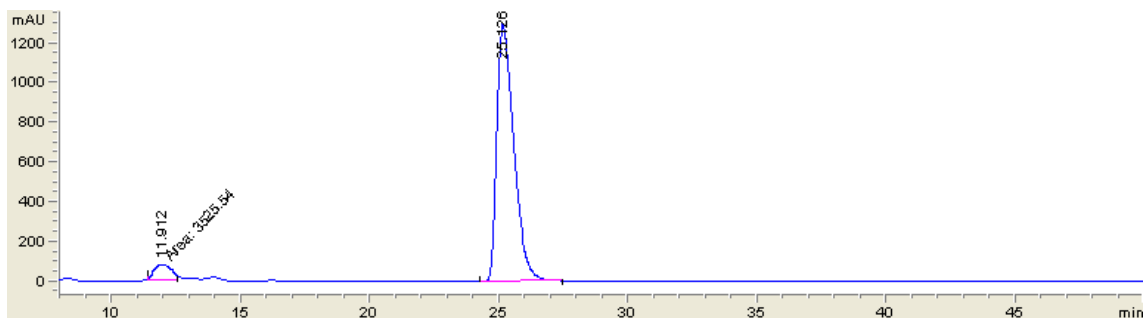
#	Time	Area	Height	Width	Area%	Symmetry
1	16.224	4456.2	86.1	0.8401	100.000	0.892

(2*R*,4*R*,5*S*)-Methyl 5-phenyl-4-(4-(trifluoromethyl)phenyl)pyrrolidine-2-carboxylate (*exo*-65b)

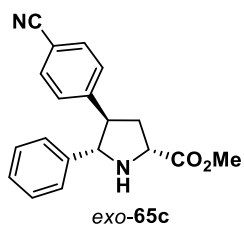
Racemic



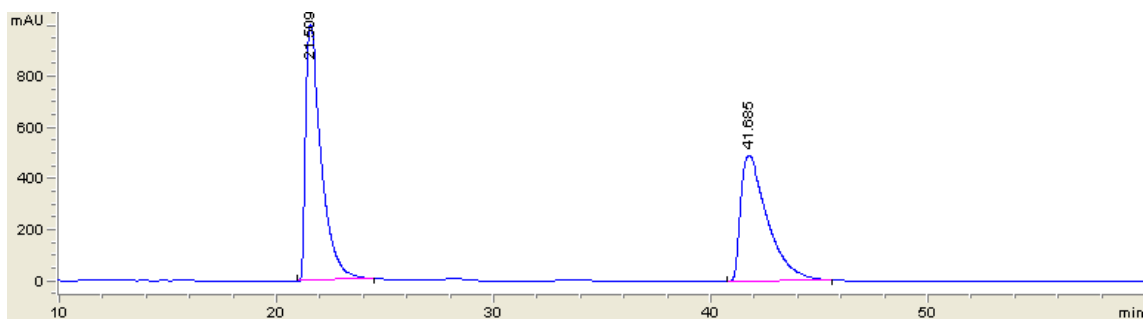
#	Time	Area	Height	Width	Area%	Symmetry
1	11.866	80223.7	2056.6	0.6211	53.228	0.625
2	25.101	70493.6	1472.9	0.7524	46.772	0.536

(+)-*exo*-65b: 89% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	11.912	3525.5	75.6	0.7775	5.523	0.733
2	25.126	60313.6	1298	0.7161	94.477	0.543

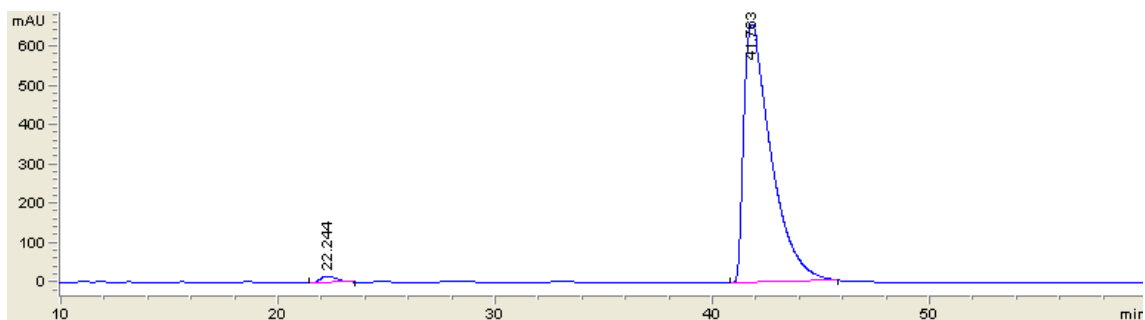
(2*R*,4*R*,5*S*)-Methyl 4-(4-cyanophenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65c)

Racemic



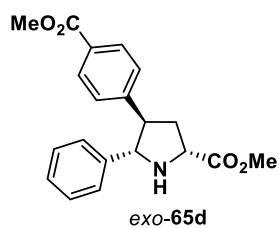
#	Time	Area	Height	Width	Area%	Symmetry
1	21.509	52431.3	1004.9	0.7827	54.883	0.382
2	41.685	43102.2	492.9	1.2622	45.117	0.382

(+)-*exo*-64c: 97% ee

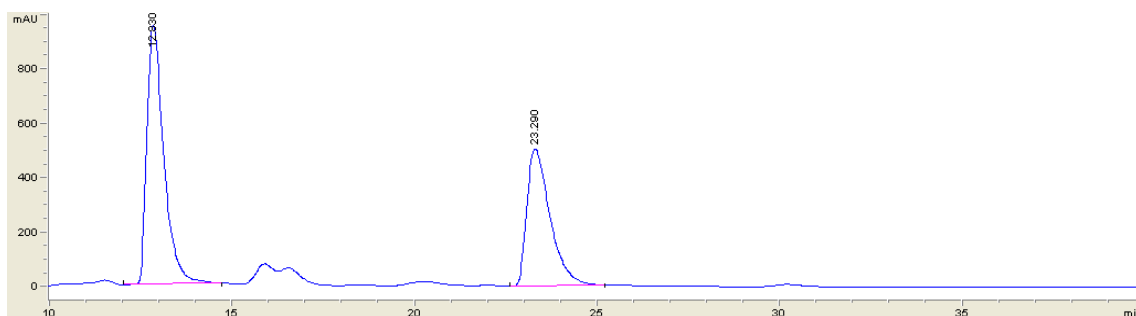


#	Time	Area	Height	Width	Area%	Symmetry
1	22.244	828.7	16	0.7018	1.393	0.634
2	41.763	58673.8	656.2	1.2451	98.607	0.373

(2*R*,4*R*,5*S*)-Methyl 4-(4-(methoxycarbonyl)phenyl)-5-phenylpyrrolidine-2-carboxylate
(*exo*-65d)

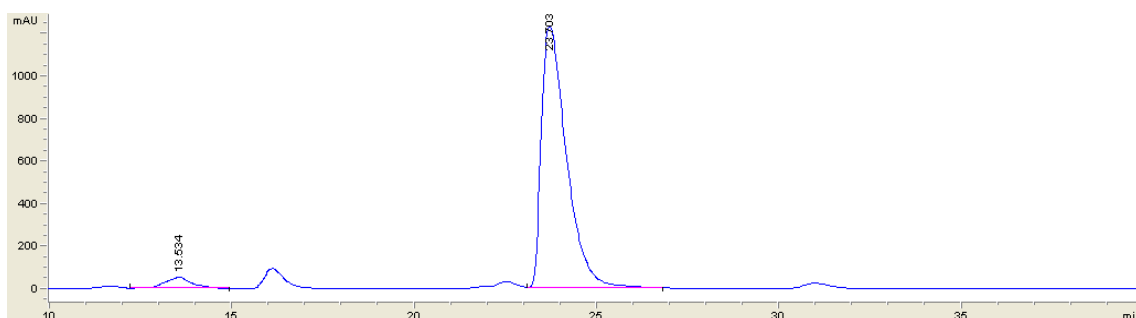


Racemic

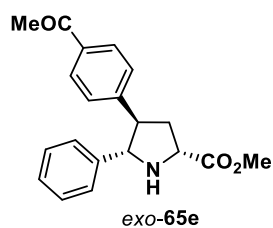


#	Time	Area	Height	Width	Area%	Symmetry
1	12.83	30834.5	951.4	0.4941	58.094	0.561
2	23.29	22242.6	503.7	0.6732	41.906	0.519

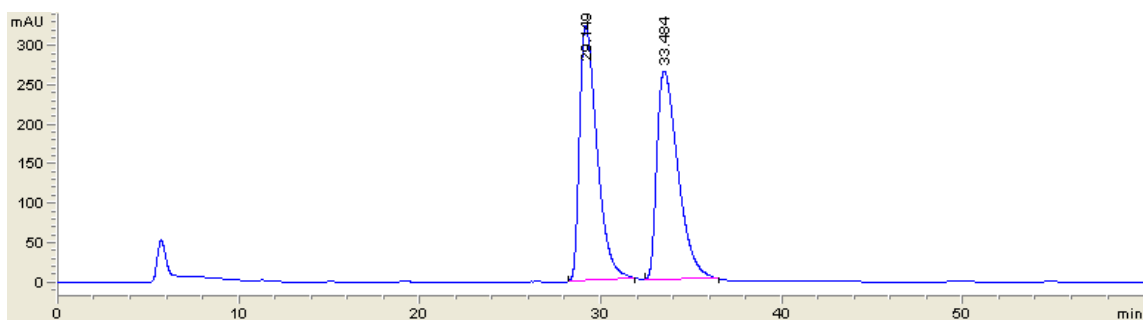
(+)-*exo*-65d: 91% ee



#	Time	Area	Height	Width	Area%	Symmetry
1	13.534	2876.9	53.2	0.7407	4.636	1.07
2	23.703	59182.3	1230.7	0.735	95.364	0.454

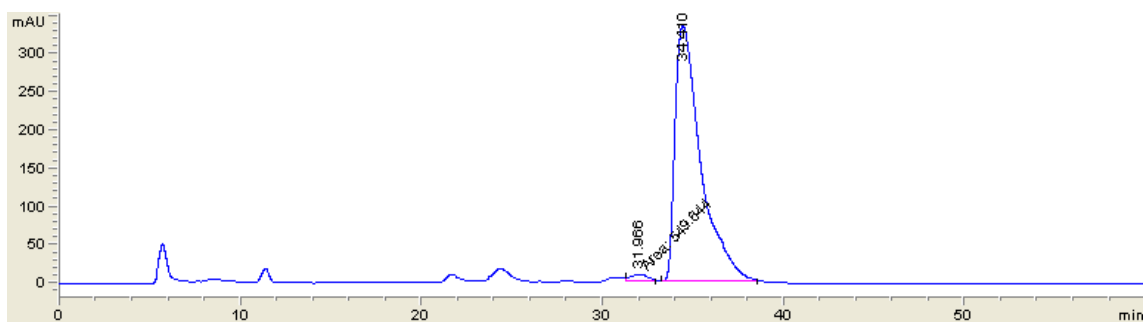
(2R,4R,5S)-Methyl 4-(4-acetylphenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65e)

Racemic

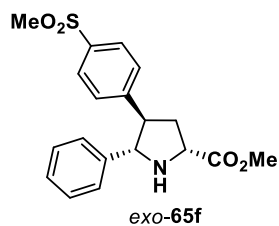


#	Time	Area	Height	Width	Area%	Symmetry
1	29.149	21465.1	324.1	0.9968	50.341	0.513
2	33.484	21174.5	265.3	1.2051	49.659	0.495

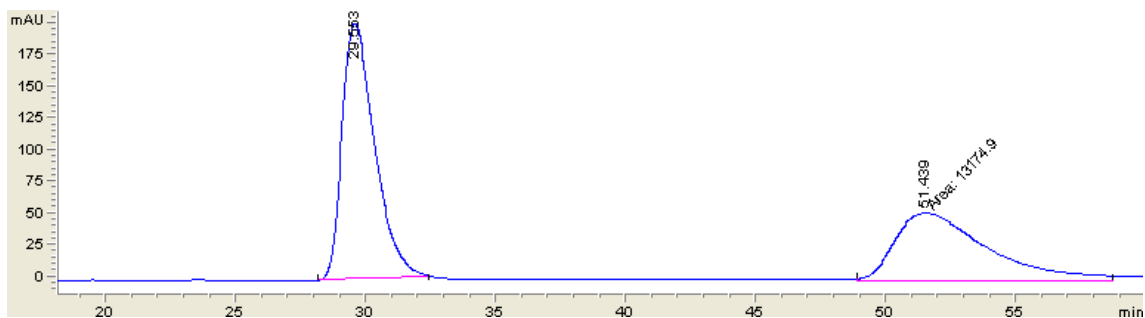
(+)-exo-65e: 97% ee



#	Time	Area	Height	Width	Area%	Symmetry
1	31.966	549.6	8.3	1.1072	1.650	0.913
2	34.41	32771.6	335	1.4312	98.350	0.395

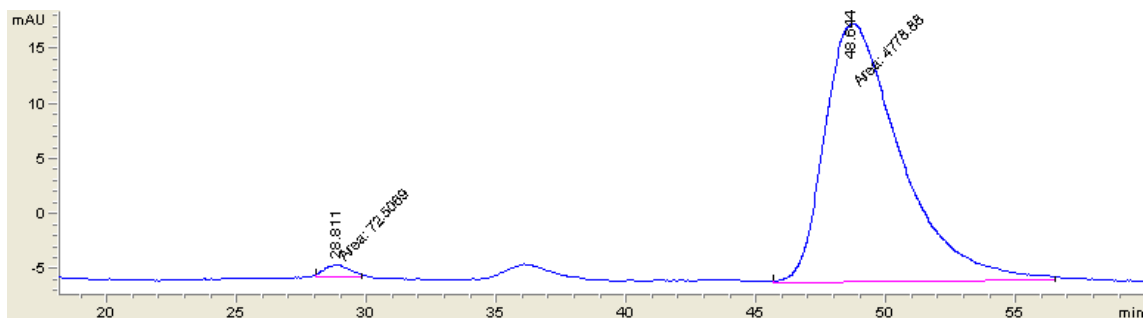
(2R,4R,5S)-Methyl 4-(4-(methylsulfonyl)phenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65f)

Racemic

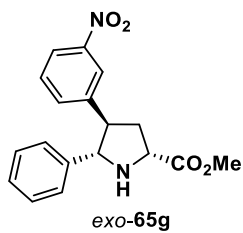


#	Time	Area	Height	Width	Area%	Symmetry
1	29.553	17637.3	201.9	1.2953	57.241	0.598
2	51.439	13174.9	53.4	4.1116	42.759	0.446

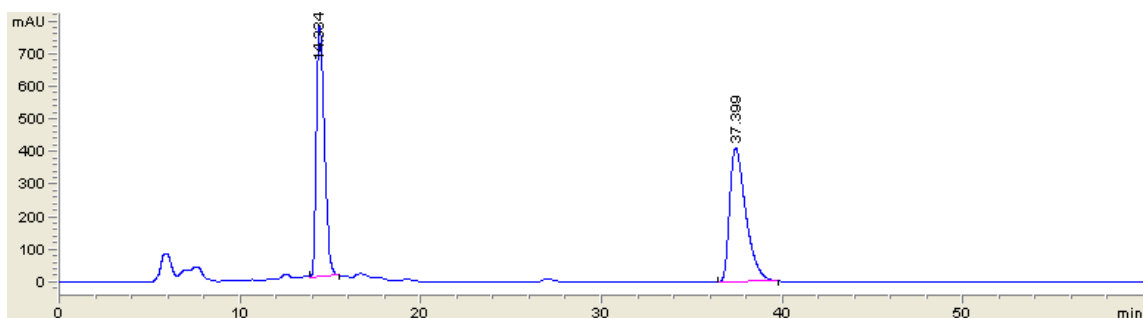
(+)-exo-65f: 97% ee



#	Time	Area	Height	Width	Area%	Symmetry
1	28.811	72.5	1.1	1.0967	1.495	0.886
2	48.644	4778.9	23.5	3.3944	98.505	0.533

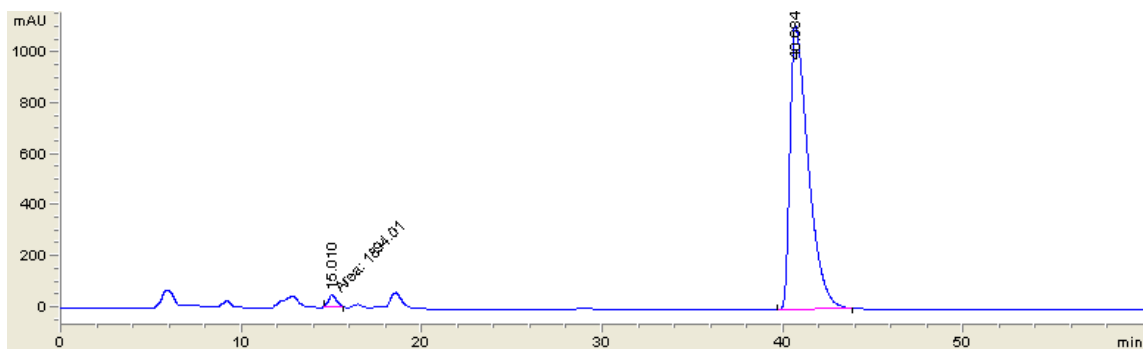
(2R,4R,5S)-Methyl 4-(3-nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65g)

Racemic

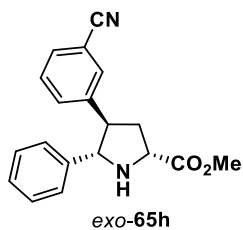


#	Time	Area	Height	Width	Area%	Symmetry
1	14.334	24150.3	772.2	0.4829	48.907	0.627
2	37.399	25229.9	410.5	0.923	51.093	0.548

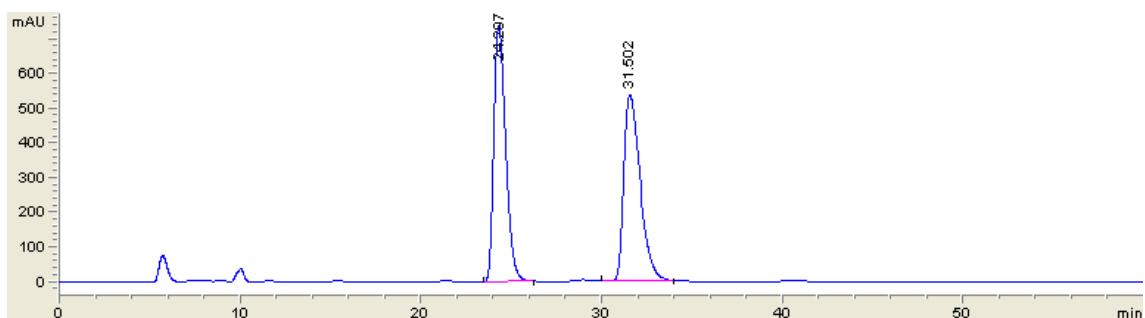
(+)-exo-65g: 95% ee



#	Time	Area	Height	Width	Area%	Symmetry
1	15.01	1894	50.6	0.6243	2.259	0.879
2	40.684	81933.6	1112.6	1.0851	97.741	0.462

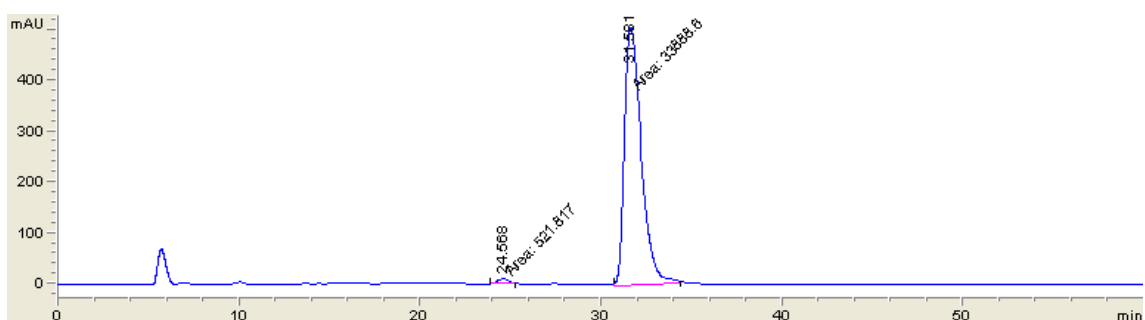
(2R,4R,5S)-Methyl 4-(3-cyanophenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65h)

Racemic

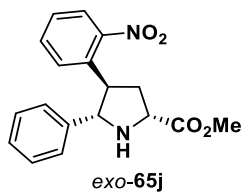
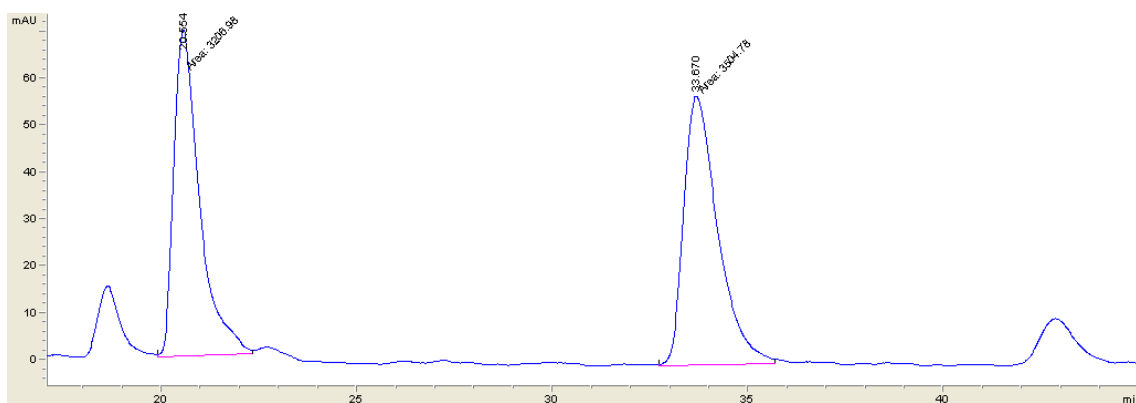


#	Time	Area	Height	Width	Area%	Symmetry
1	24.297	33229.7	739.2	0.7025	49.156	0.651
2	31.502	34370.3	536.3	0.9777	50.844	0.53

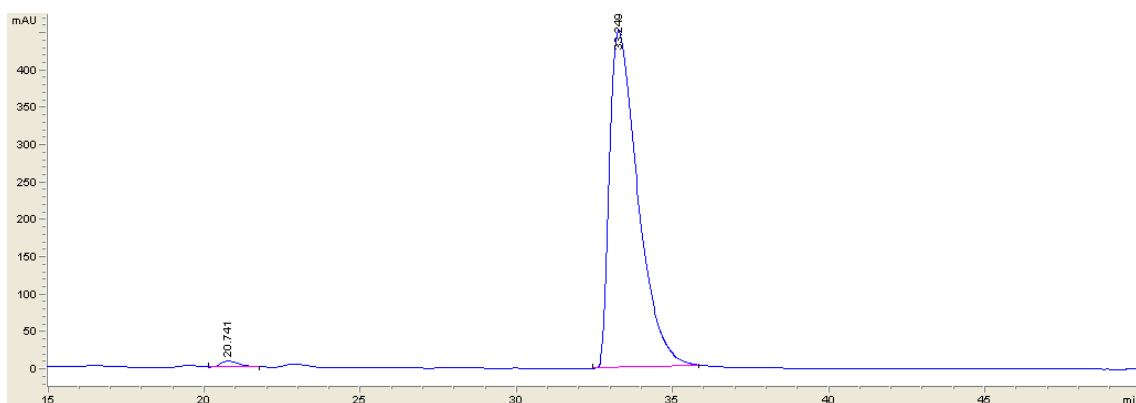
(+)-exo-65h: 97% ee



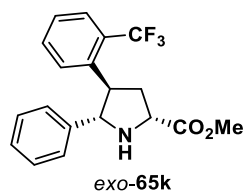
#	Time	Area	Height	Width	Area%	Symmetry
1	24.568	521.8	11	0.7921	1.516	0.873
2	31.581	33888.6	507.3	1.1134	98.484	0.529

(2*R*,4*R*,5*S*)-Methyl 4-(2-nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (*exo*-65j)Racemic *exo* + *endo*

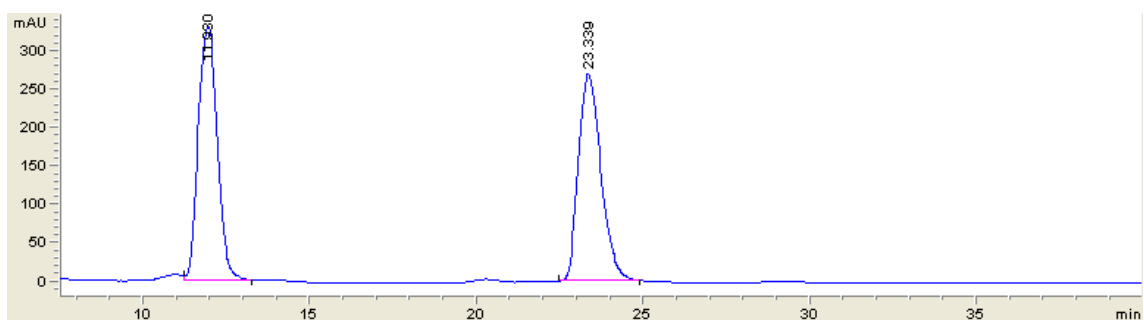
#	Time	Area	Height	Width	Area%	Symmetry
1	20.554	3207	69.5	0.7691	47.781	0.552
2	33.67	3504.8	57.5	1.0154	52.219	0.572

(-)-*exo*-65j: 98% *ee*

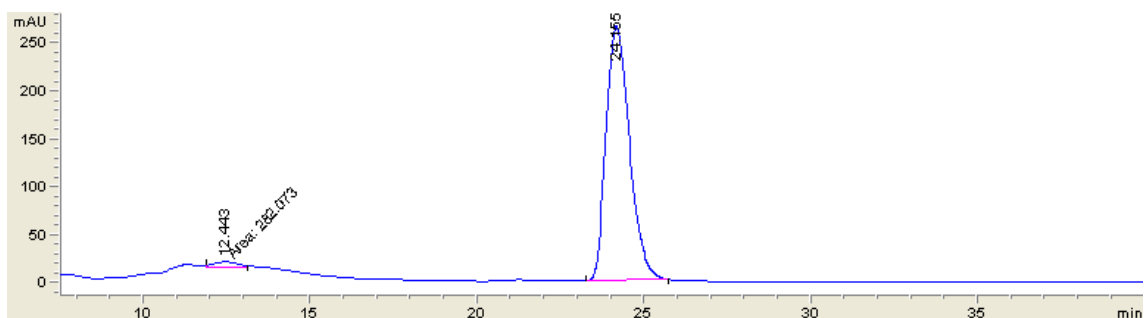
#	Time	Area	Height	Width	Area%	Symmetry
1	20.741	326.9	7.8	0.4963	1.136	0.677
2	33.249	28438.4	451.2	0.9513	98.864	0.432

(2*R*,4*R*,5*S*)-Methyl 5-phenyl-4-(2-(trifluoromethyl)phenyl)pyrrolidine-2-carboxylate (*exo*-65k)

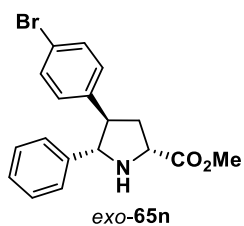
Racemic



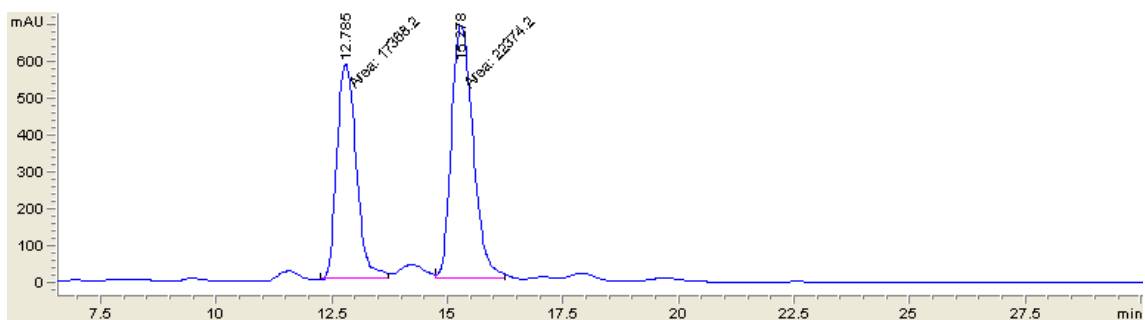
#	Time	Area	Height	Width	Area%	Symmetry
1	11.93	13164.4	330.9	0.6542	50.758	0.965
2	23.339	12771.4	269.7	0.7425	49.242	0.734

(+)-*exo*-65k: 96% ee

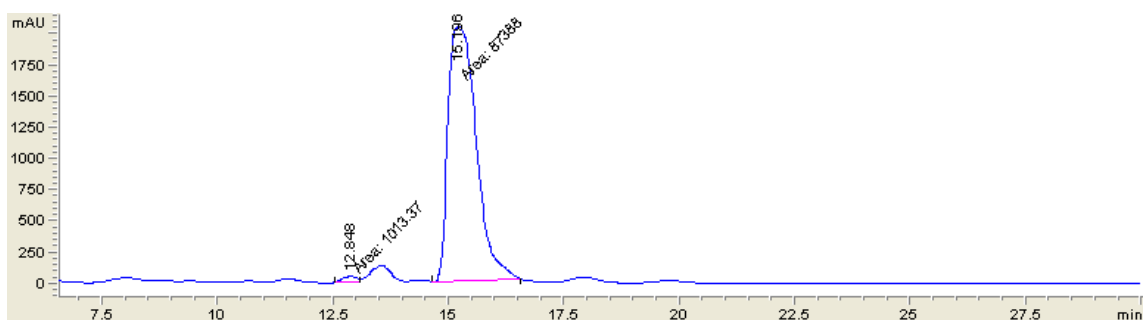
#	Time	Area	Height	Width	Area%	Symmetry
1	12.443	282.1	5.7	0.8205	2.126	0.918
2	24.155	12987.8	265.7	0.7703	97.874	0.73

(2R,4R,5S)-Methyl 4-(4-bromophenyl)-5-phenylpyrrolidine-2-carboxylate (*exo*-65n)

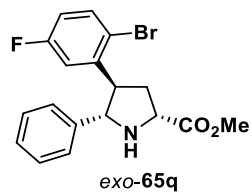
Racemic



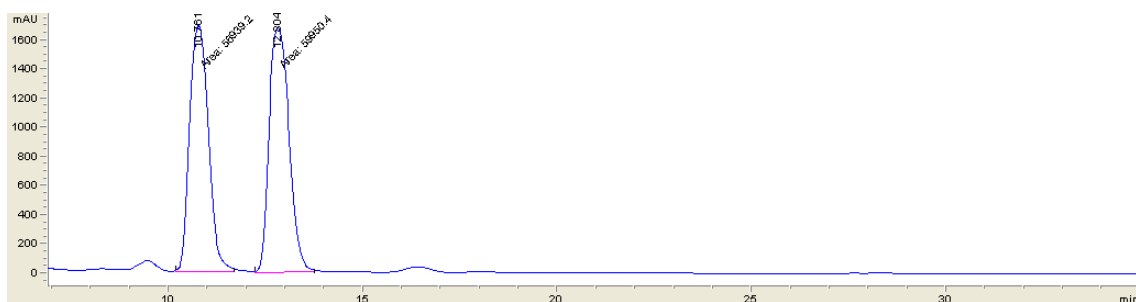
#	Time	Area	Height	Width	Area%	Symmetry
1	12.785	17368.2	586.3	0.4937	43.702	0.793
2	15.278	22374.2	686.3	0.5433	56.298	0.755

(+)-*exo*-65n: 98% ee

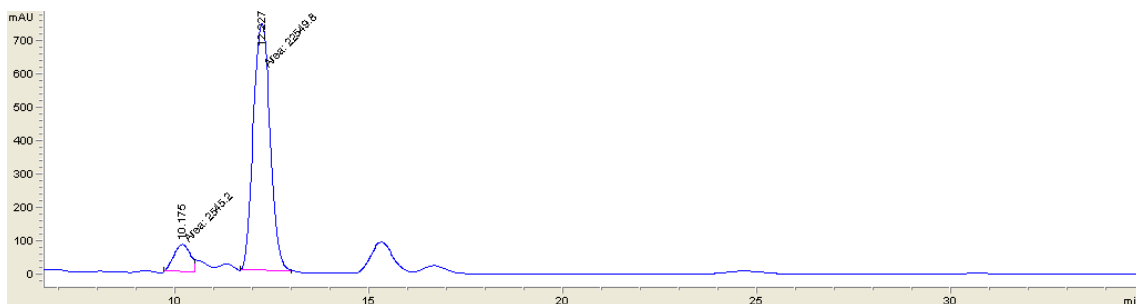
#	Time	Area	Height	Width	Area%	Symmetry
1	12.848	1013.4	43	0.3928	1.146	0.918
2	15.196	87388	2042	0.7132	98.854	0.537

(2*R*,4*R*,5*S*)-Methyl 4-(2-bromo-5-fluorophenyl)-5-phenylpyrrolidine-2-carboxylate (*exo*-65q)

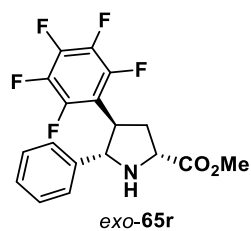
Racemic



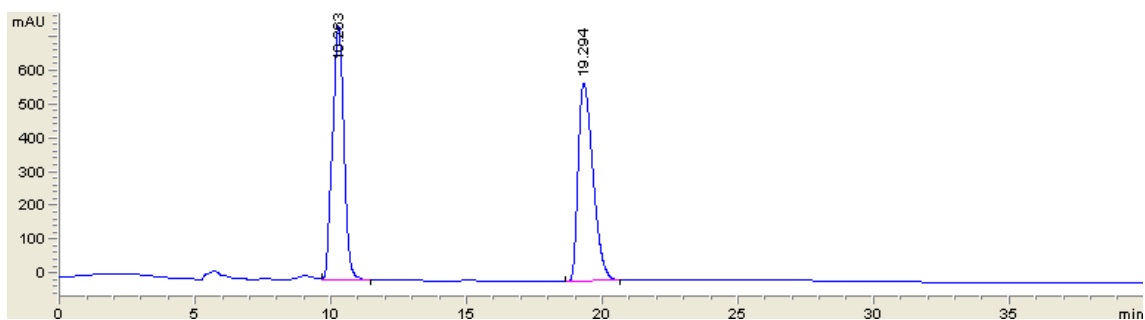
#	Time	Area	Height	Width	Area%	Symmetry
1	10.761	56939.2	1692.6	0.5607	48.712	0.848
2	12.804	59950.4	1673.8	0.597	51.288	0.762

(-)-*exo*-65q: 80% *ee*

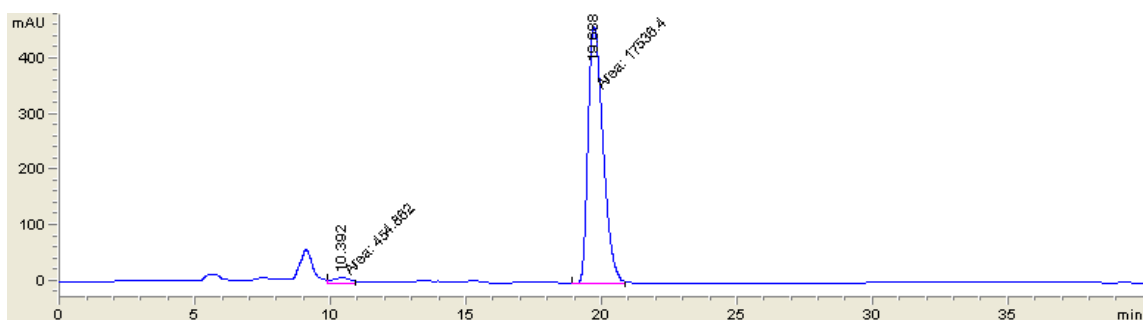
#	Time	Area	Height	Width	Area%	Symmetry
1	10.175	2545.2	84.1	0.5043	10.142	0.999
2	12.227	22549.8	743	0.5059	89.858	0.976

(2R,4R,5S)-Methyl 4-(perfluorophenyl)-5-phenylpyrrolidine-2-carboxylate (exo-65r)

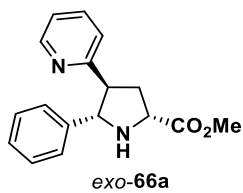
Racemic



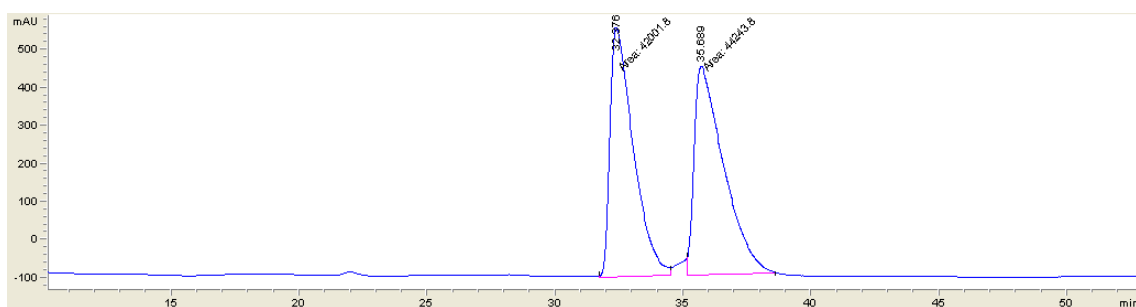
#	Time	Area	Height	Width	Area%	Symmetry
1	10.263	21677.7	753.6	0.4336	49.764	1.024
2	19.294	21883.3	585	0.5904	50.236	0.581

(+)-*exo*-65r: 95% ee

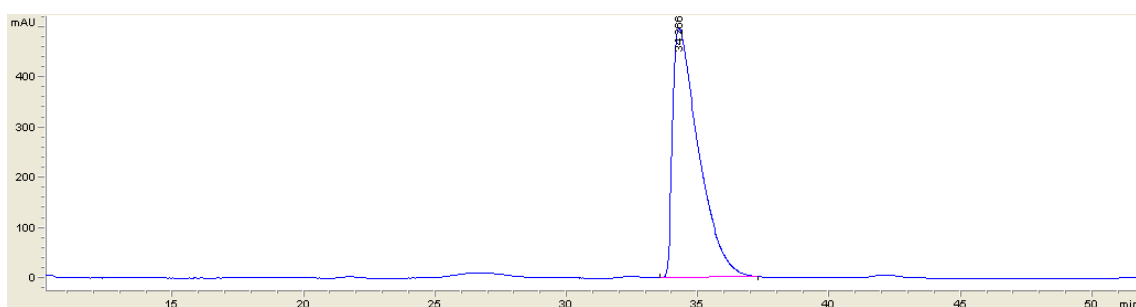
#	Time	Area	Height	Width	Area%	Symmetry
1	10.392	454.9	10.3	0.7356	2.528	1.124
2	19.688	17536.4	462.6	0.6318	97.472	0.629

(2*R*,4*S*,5*S*)-Methyl 5-phenyl-4-(pyridin-2-yl)pyrrolidine -2-carboxylate (*exo*-66a)

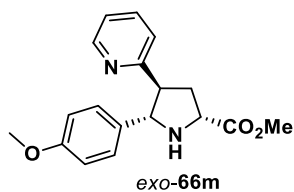
Racemic



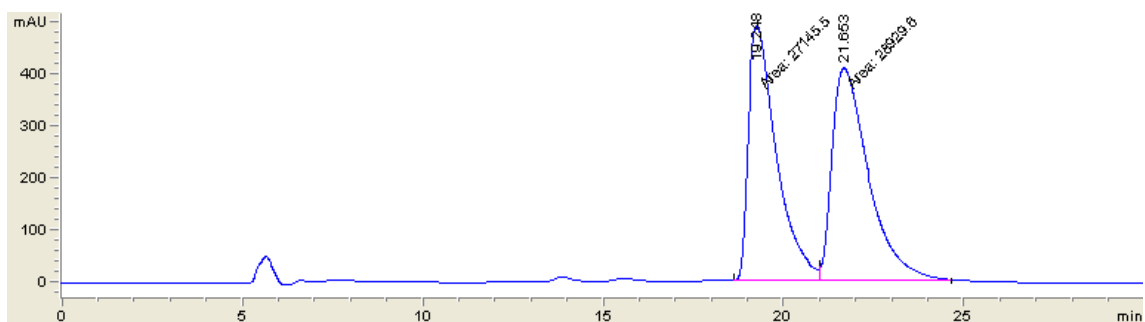
#	Time	Area	Height	Width	Area%	Symmetry
1	32.376	42001.8	657.6	1.0645	48.700	0
2	35.689	44243.8	550.7	1.339	51.300	0.292

(+)-*exo*-66a: $\geq 98\%$ ee

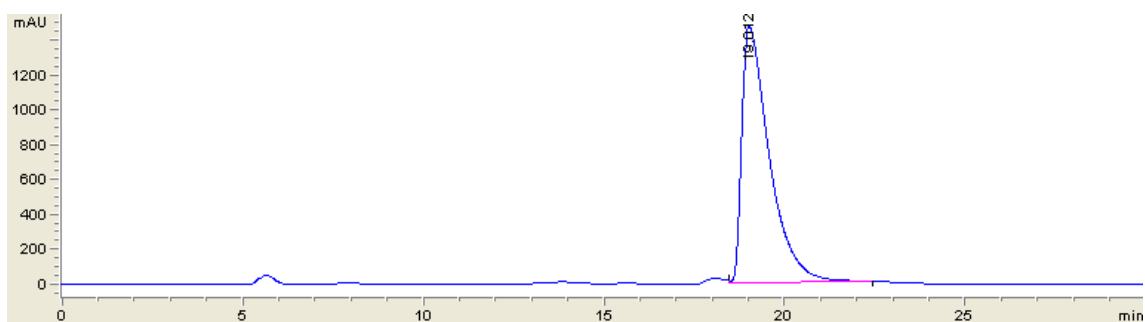
#	Time	Area	Height	Width	Area%	Symmetry
1	34.266	33921.2	496.8	0.9166	100.000	0.299

(2*R*,4*S*,5*S*)-Methyl 5-(4-methoxyphenyl)-4-(pyridin-2-yl)pyrrolidine -2-carboxylate (*exo*-66m)

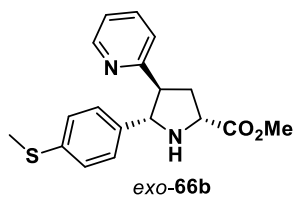
Racemic



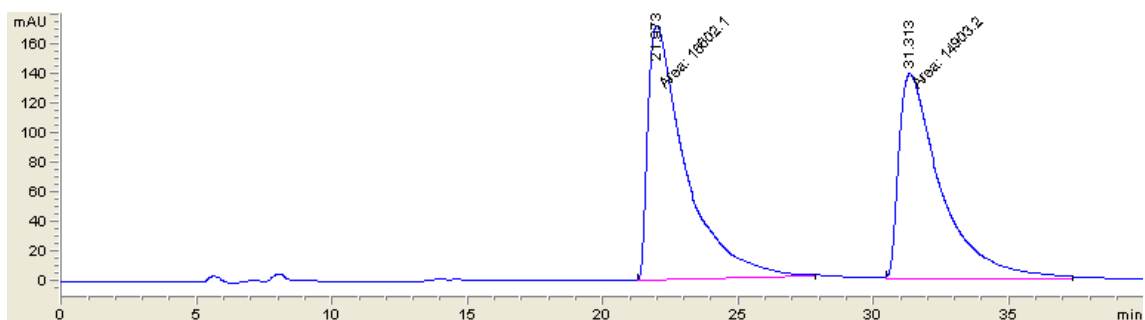
#	Time	Area	Height	Width	Area%	Symmetry
1	19.248	27145.5	491.8	0.92	48.409	0
2	21.653	28929.6	410.1	1.1756	51.591	0.454

(+)-*exo*-66m: $\geq 98\%$ ee

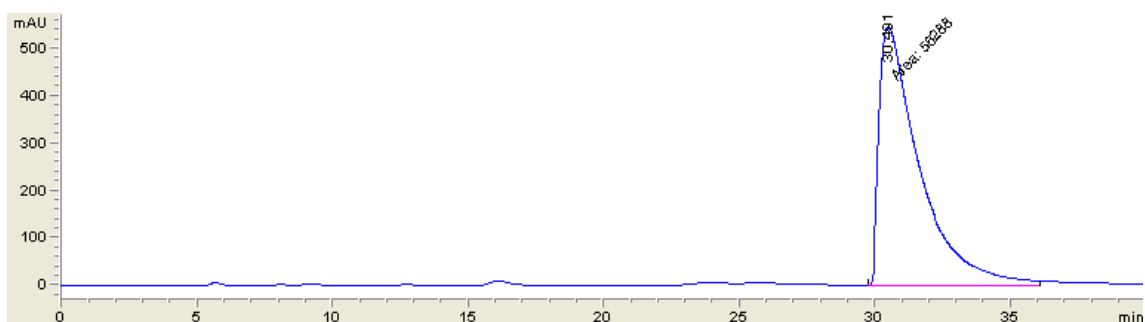
#	Time	Area	Height	Width	Area%	Symmetry
1	19.012	80640.2	1479.3	0.792	100.000	0.379

(2*R*,4*S*,5*S*)-Methyl 5-(4-methylthiophenyl)-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (*exo*-66b)

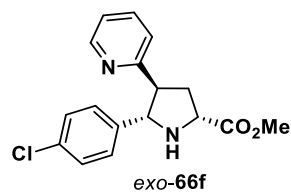
Racemic



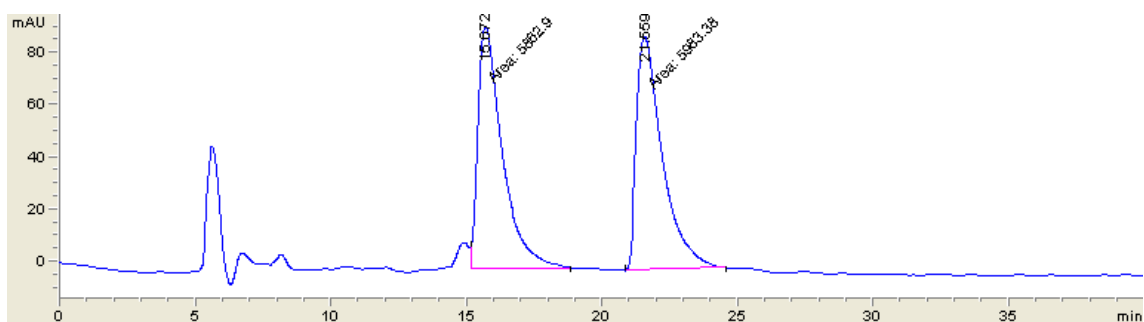
#	Time	Area	Height	Width	Area%	Symmetry
1	21.973	16602.1	171.8	1.6108	52.696	0.288
2	31.313	14903.2	138.4	1.7941	47.304	0.332

(+)-*exo*-66b: $\geq 98\%$ ee

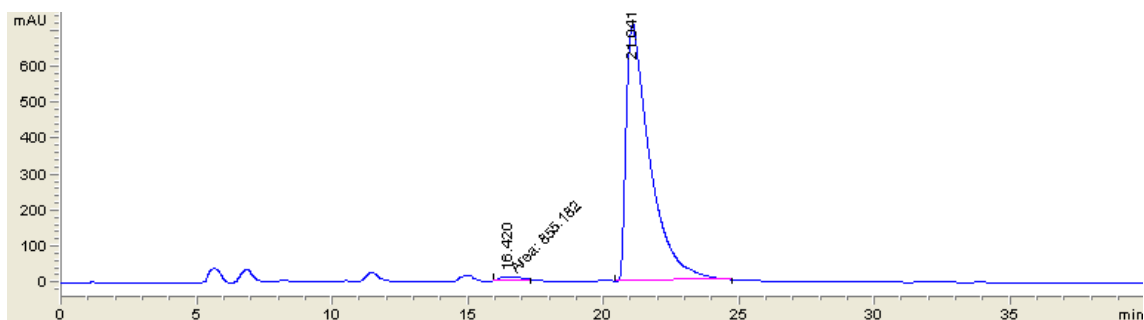
#	Time	Area	Height	Width	Area%	Symmetry
1	30.491	56288	546.6	1.7163	100.000	0.285

(2*R*,4*S*,5*S*)-Methyl 5-(4-chlorophenyl)-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (*exo*-66f)

Racemic

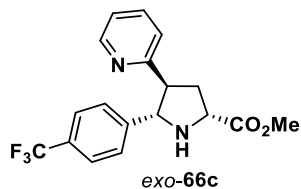


#	Time	Area	Height	Width	Area%	Symmetry
1	15.672	5862.9	93.4	1.0463	49.491	0.413
2	21.559	5983.4	89.7	1.1119	50.509	0.451

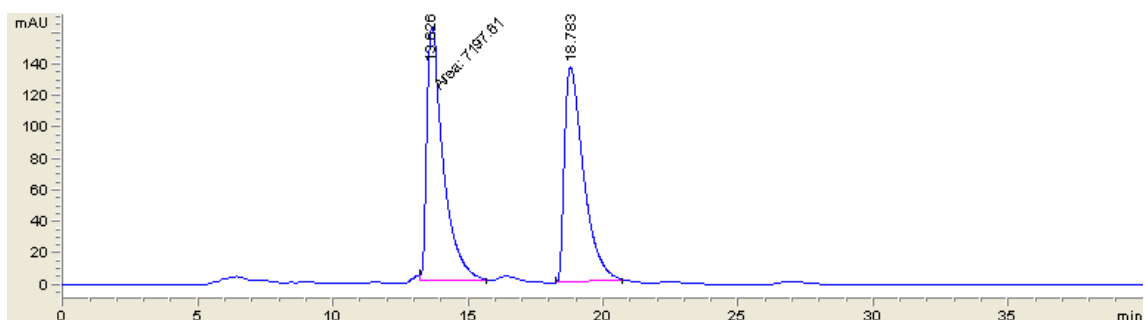
(+)-*exo*-66f: 96% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	16.42	855.2	14.1	1.0077	1.874	0.54
2	21.041	44786.7	714.3	0.9055	98.126	0.339

(2*R*,4*S*,5*S*)-Methyl 4-(pyridin-2-yl)-5-(4-(trifluoromethyl)phenyl)pyrrolidine-2-carboxylate
(*exo*-66c)

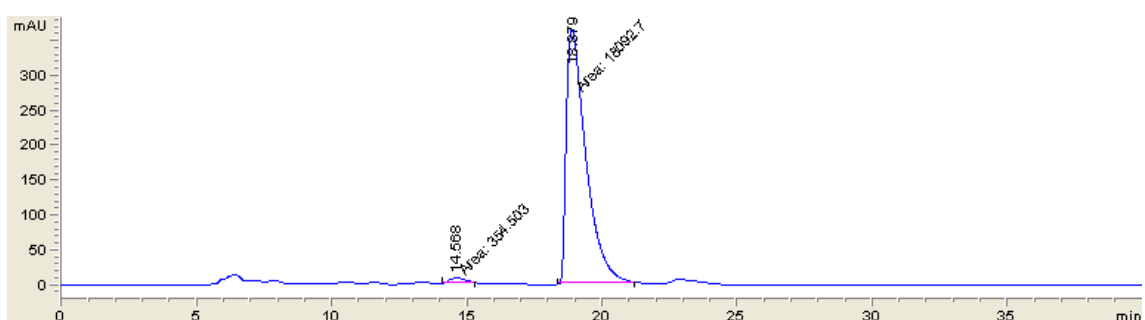


Racemic

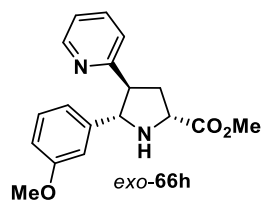


#	Time	Area	Height	Width	Area%	Symmetry
1	13.626	7197.6	162.1	0.7403	52.246	0.413
2	18.783	6578.7	136.5	0.7265	47.754	0.426

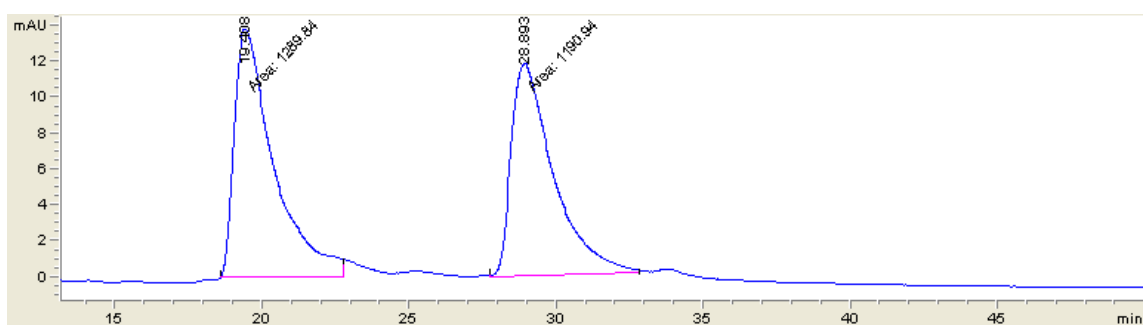
(+)-*exo*-66c: 96% ee



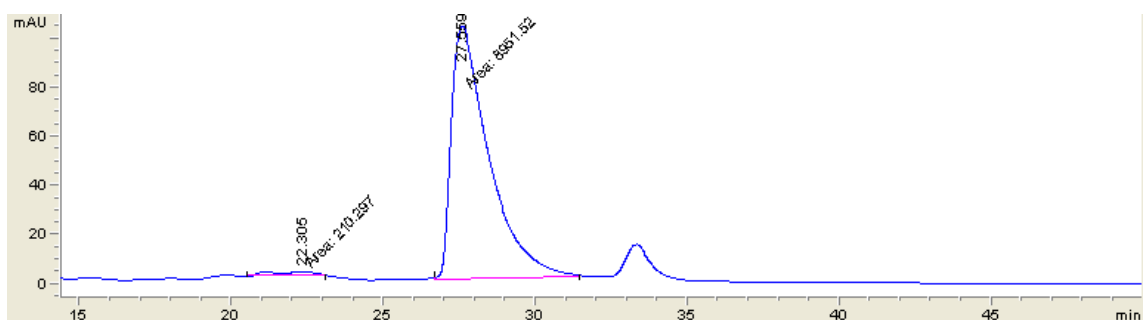
#	Time	Area	Height	Width	Area%	Symmetry
1	14.568	354.5	8.1	0.727	1.922	0.652
2	18.879	18092.7	364	0.8284	98.078	0.379

(2*R*,4*S*,5*S*)-Methyl 5-(3-methoxyphenyl)-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (*exo*-66h)

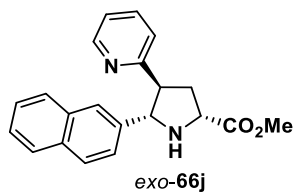
Racemic



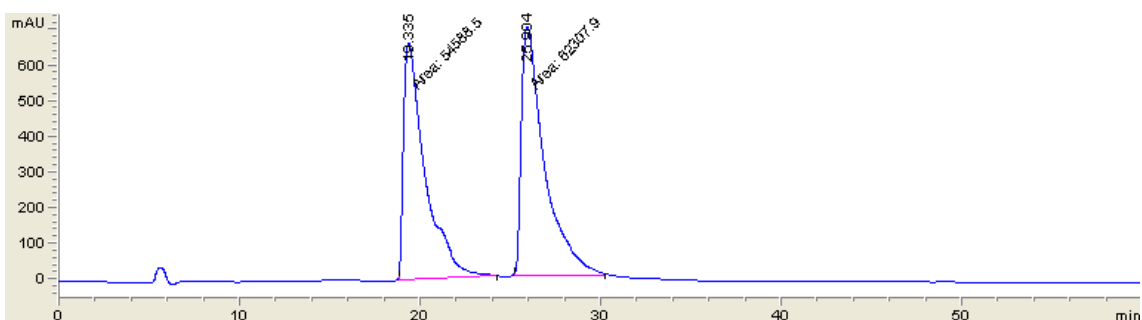
#	Time	Area	Height	Width	Area%	Symmetry
1	19.408	1289.8	13.9	1.5511	51.993	0.38
2	28.893	1190.9	11.8	1.676	48.007	0.435

(+)-*exo*-66h: 95% ee

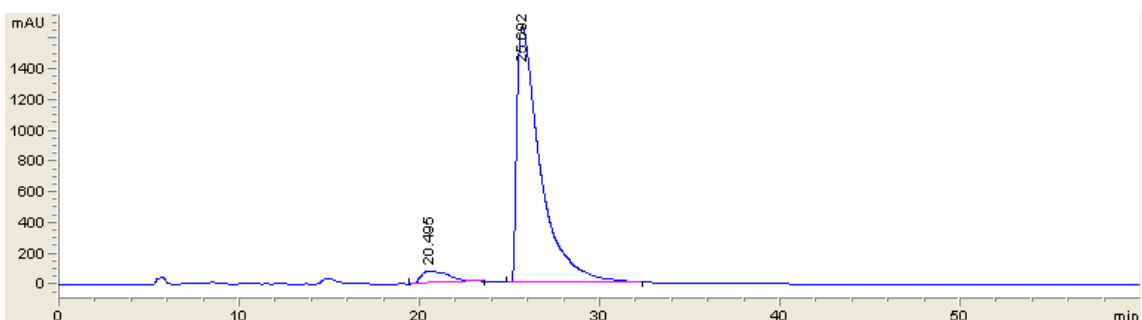
#	Time	Area	Height	Width	Area%	Symmetry
1	22.305	210.3	2	1.7907	2.295	2.348
2	27.559	8951.5	103.1	1.4476	97.705	0.369

(2R,4S,5S)-Methyl 5-(naphthalen-2-yl)-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (exo-66j)

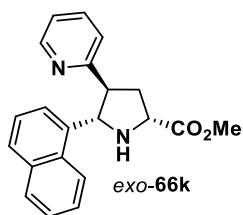
Racemic



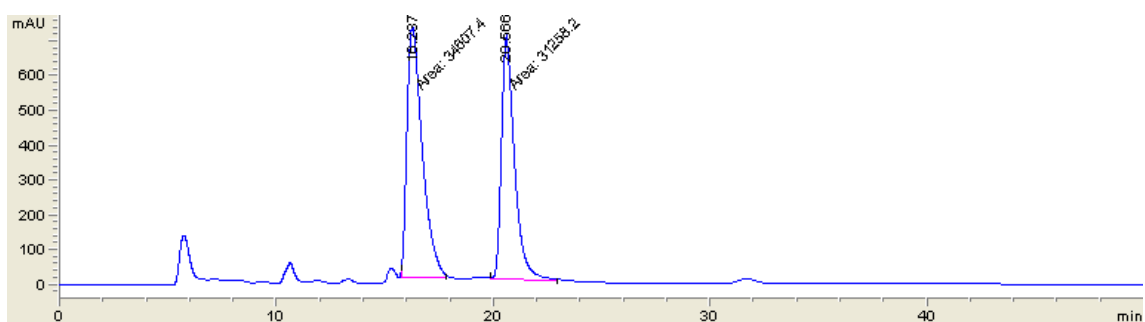
#	Time	Area	Height	Width	Area%	Symmetry
1	19.335	54588.5	662.9	1.3725	46.698	0.292
2	25.904	62307.9	702.5	1.4783	53.302	0.317

(+)-exo-66j: 89% ee

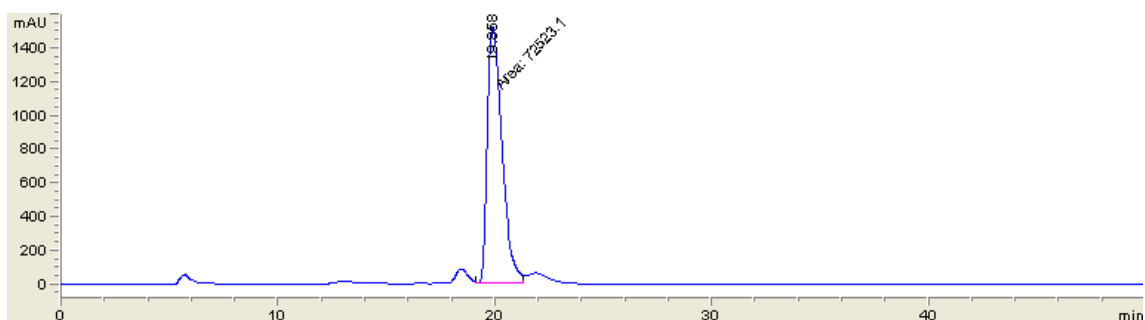
#	Time	Area	Height	Width	Area%	Symmetry
1	20.495	8715.7	81.8	1.2669	5.608	0.39
2	25.692	146694.3	1663.7	1.1707	94.392	0.271

(2R,4S,5S)-Methyl 5-(naphthalen-1-yl)-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (exo-66k)

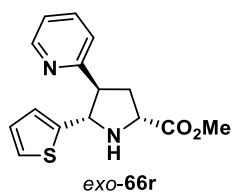
Racemic



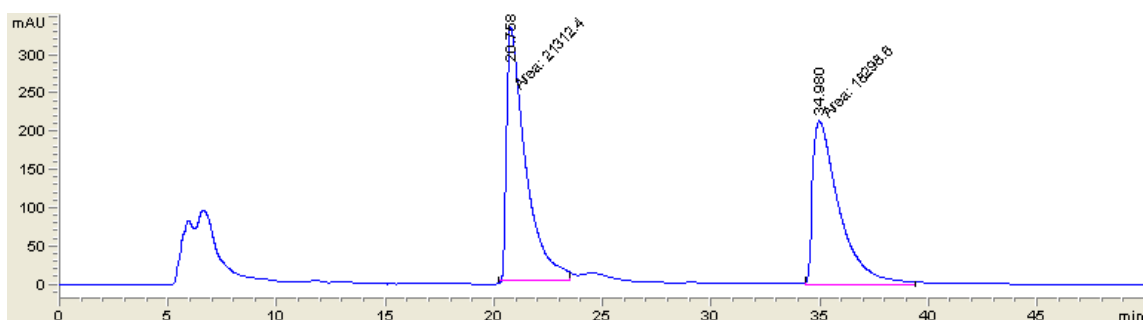
#	Time	Area	Height	Width	Area%	Symmetry
1	16.237	34607.4	719.8	0.8013	52.542	0.519
2	20.566	31258.2	704.4	0.7396	47.458	0.597

(+)-exo-66k: $\geq 98\%$ ee

#	Time	Area	Height	Width	Area%	Symmetry
1	19.858	72523.1	1526.5	0.7918	100.000	0.542

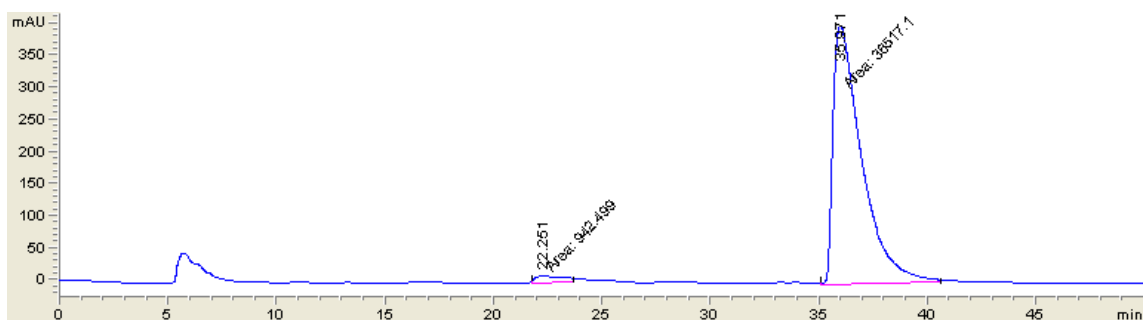
(2*R*,4*S*,5*S*)-Methyl 4-(pyridin-2-yl)-5-(thiophen-2-yl)-pyrrolidine-2-carboxylate (*exo*-66r)

Racemic

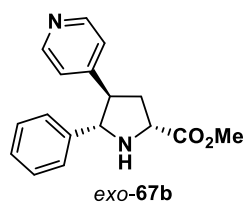


#	Time	Area	Height	Width	Area%	Symmetry
1	20.758	21312.4	333.7	1.0644	53.804	0.323
2	34.98	18298.6	214.1	1.4245	46.196	0.35

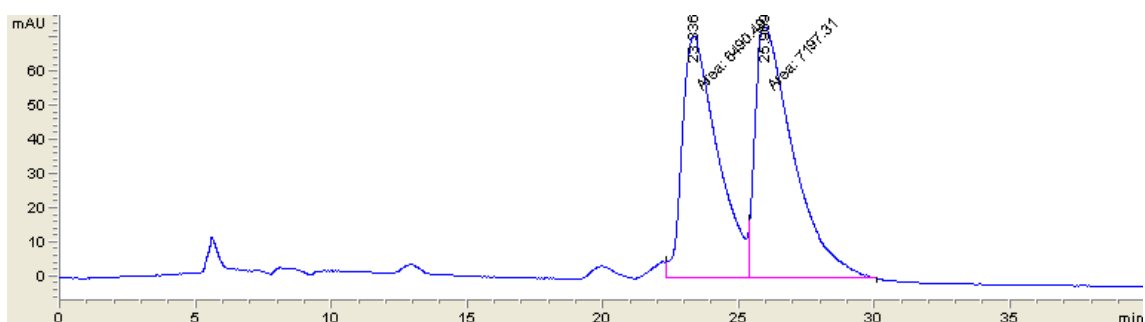
(+)-*exo*-66r: 95% *ee*



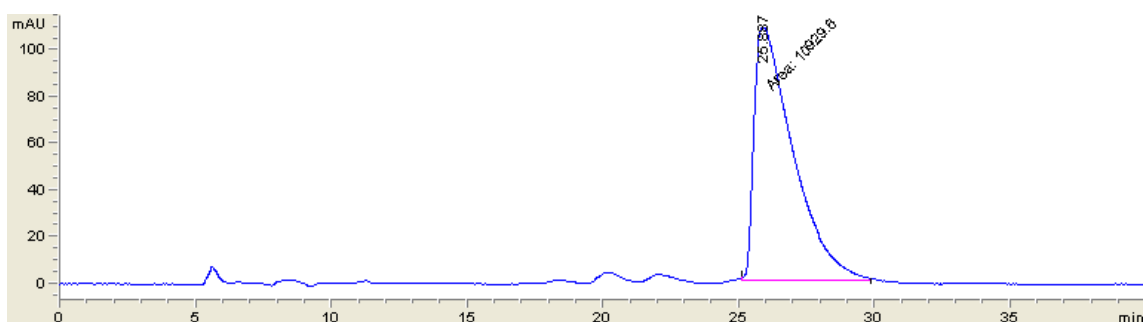
#	Time	Area	Height	Width	Area%	Symmetry
1	22.251	942.5	10.9	1.0183	2.516	0.383
2	35.971	36517.1	403.3	1.5089	97.484	0.325

(2*R*,4*S*,5*S*)-Methyl 5-phenyl-4-(pyridin-4-yl)pyrrolidine-2-carboxylate (*exo*-67b)

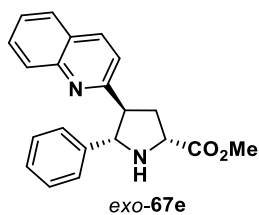
Racemic



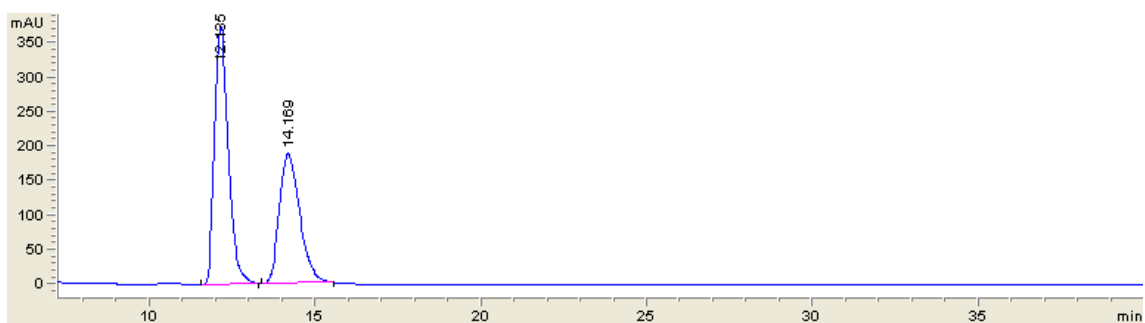
#	Time	Area	Height	Width	Area%	Symmetry
1	23.336	6490.5	70.7	1.5298	47.418	0
2	25.969	7197.3	73.4	1.6348	52.582	0.368

(+)-*exo*-67b: $\geq 98\%$ ee

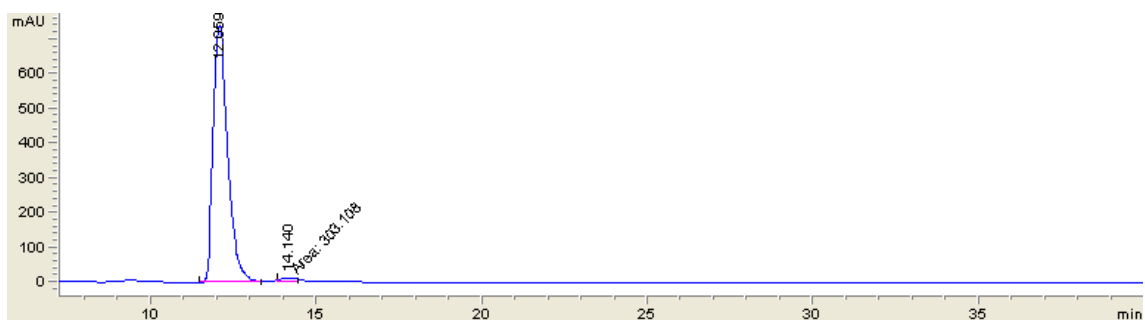
#	Time	Area	Height	Width	Area%	Symmetry
1	25.887	10929.6	108.2	1.6833	100.000	0.314

(2R,4S,5S)-Methyl 5-phenyl-4-(quinolin-2-yl)pyrrolidine-2-carboxylate (*exo*-67e)

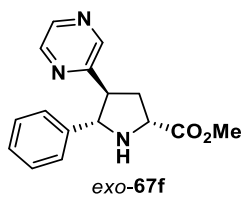
Racemic



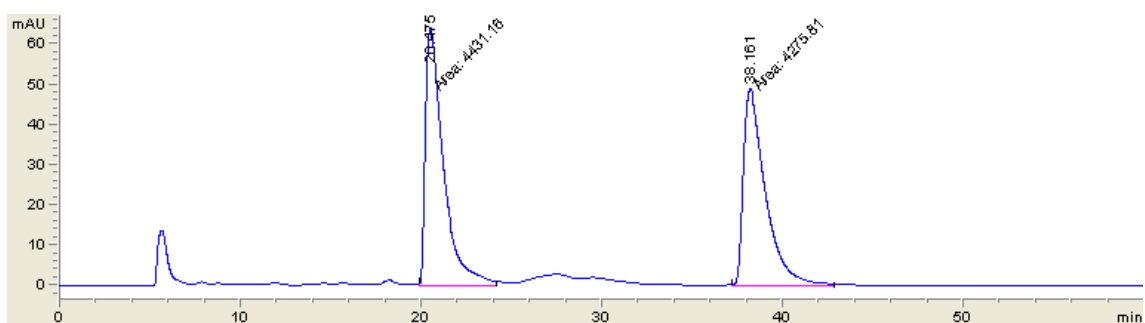
#	Time	Area	Height	Width	Area%	Symmetry
1	12.135	10862.8	374	0.4529	57.332	0.727
2	14.169	8084.3	188.9	0.6592	42.668	0.704

(+)-*exo*-67e: $\geq 98\%$ ee

#	Time	Area	Height	Width	Area%	Symmetry
1	12.059	22401.9	740.6	0.4709	98.665	0.669
2	14.14	303.1	9.8	0.518	1.335	0.957

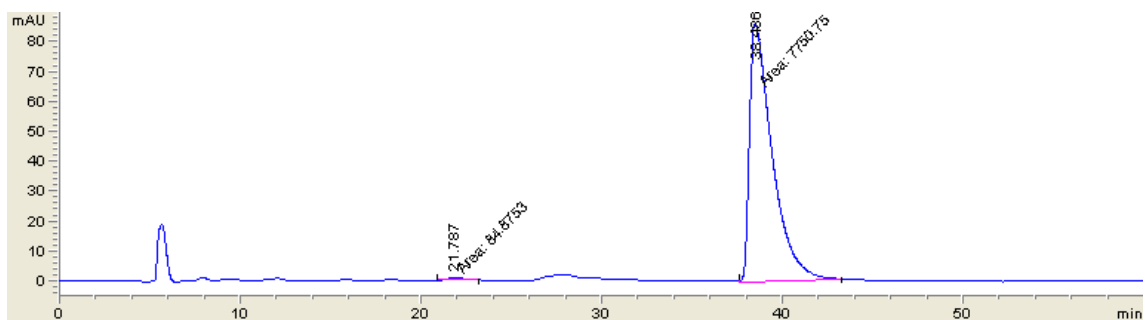
(2R,4S,5S)-Methyl 5-phenyl-4-(pyrazin-2-yl)pyrrolidine-2-carboxylate (exo-67f)

Racemic

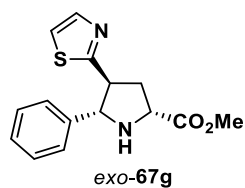


#	Time	Area	Height	Width	Area%	Symmetry
1	20.475	4431.2	64.2	1.1503	50.892	0.362
2	38.161	4275.8	49	1.4554	49.108	0.416

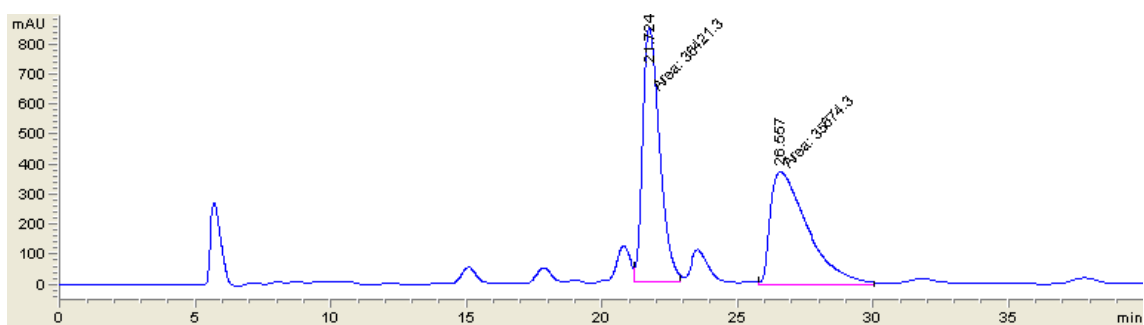
(+)-exo-67f: 98% ee



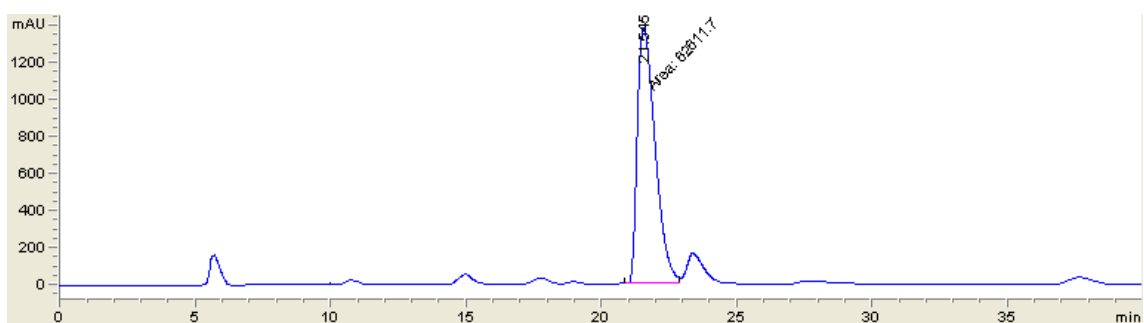
#	Time	Area	Height	Width	Area%	Symmetry
1	21.787	84.9	1.1	1.2679	1.083	0.649
2	38.486	7750.7	86.1	1.4995	98.917	0.382

(2R,4S,5S)-Methyl 5-phenyl-4-(thiazol-2-yl)pyrrolidine-2-carboxylate (exo-67g)

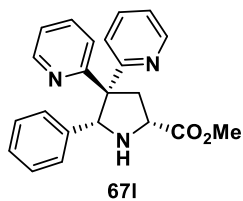
Racemic



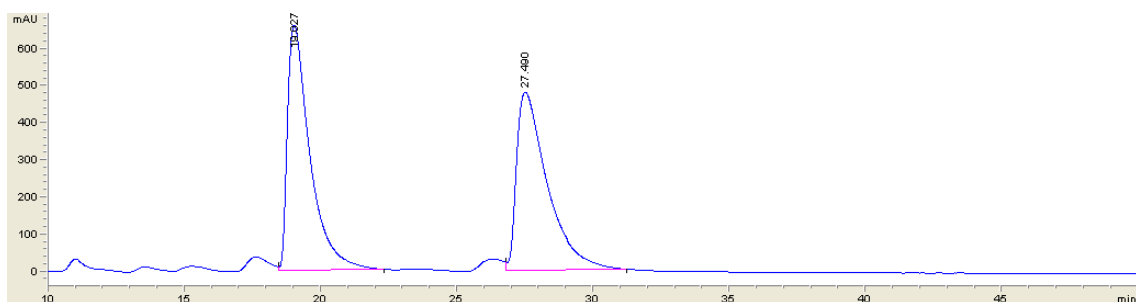
#	Time	Area	Height	Width	Area%	Symmetry
1	21.724	36421.3	850.8	0.7135	50.518	0.607
2	26.557	35674.3	375.4	1.5839	49.482	0.356

(+)-*exo*-67g: ≥98% ee

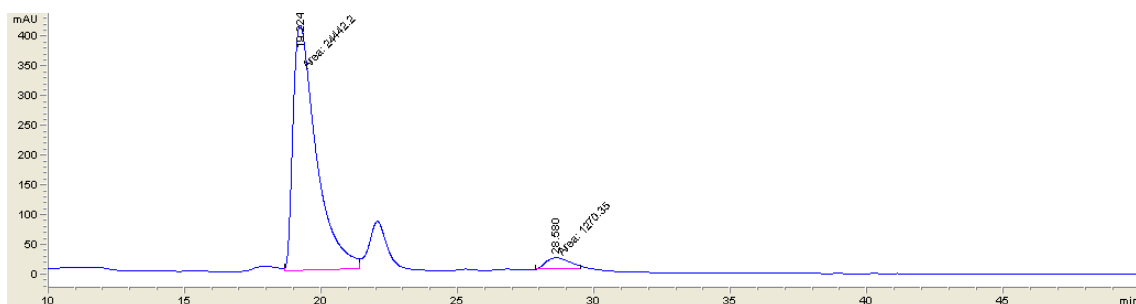
#	Time	Area	Height	Width	Area%	Symmetry
1	21.545	62611.7	1385.6	0.7531	100.000	0.508

(2*R*,5*R*)-Methyl 5-phenyl-4,4-di(pyridin-2-yl)pyrrolidine-2-carboxylate (671)

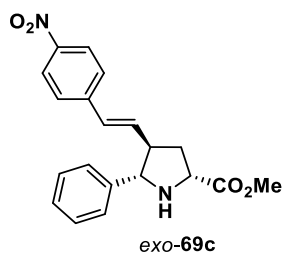
Racemic



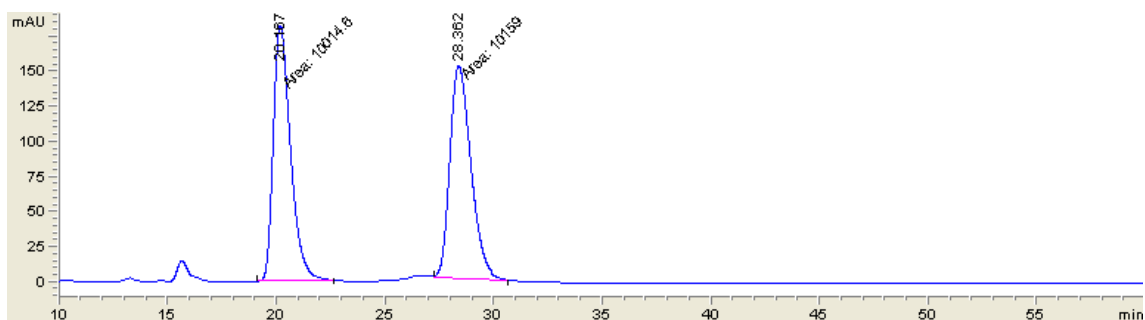
#	Time	Area	Height	Width	Area%	Symmetry
1	19.027	37905.3	662.3	0.8357	50.086	0.383
2	27.49	37775.4	481	1.1183	49.914	0.364

(+)-671: 90% ee

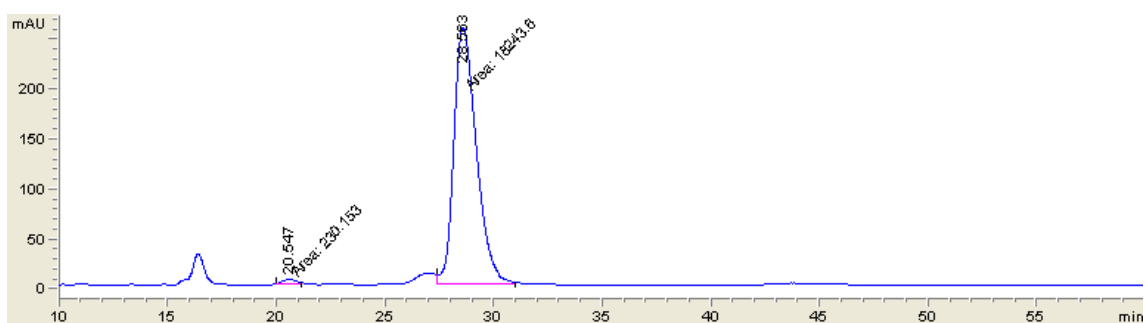
#	Time	Area	Height	Width	Area%	Symmetry
1	19.224	24442.2	413	0.9864	95.059	0.412
2	28.58	1270.4	19.8	1.0684	4.941	0.644

(2R,4R,5S)-Methyl 4-(4-((E)-2-nitrovinyl)phenyl)-5-phenylpyrrolidine-2-carboxylate (exo-69c)

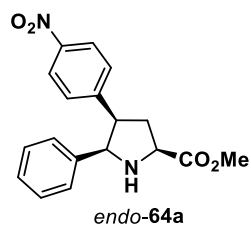
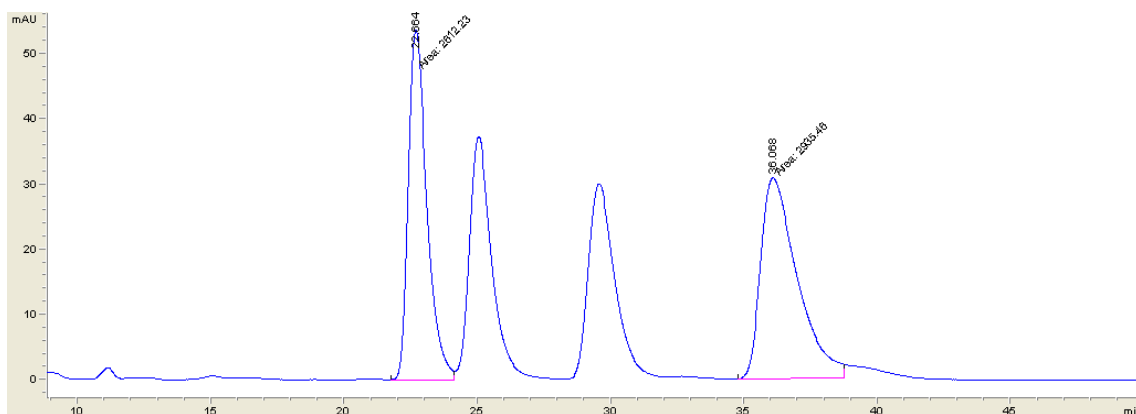
Racemic



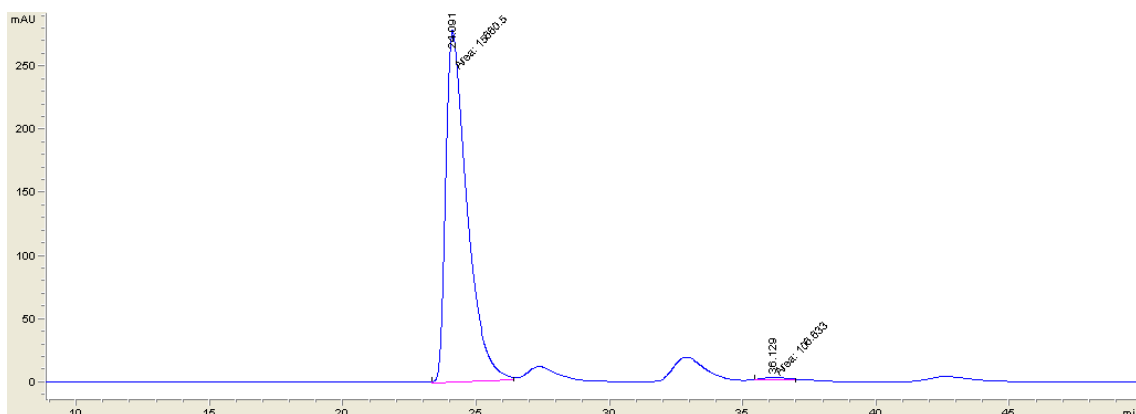
#	Time	Area	Height	Width	Area%	Symmetry
1	20.167	10014.6	182.6	0.9141	49.642	0.65
2	28.362	10159	152.1	1.1129	50.358	0.703

(+)-exo-69c: 97% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	20.547	230.2	4.8	0.792	1.246	0.852
2	28.563	18243.6	256.8	1.184	98.754	0.666

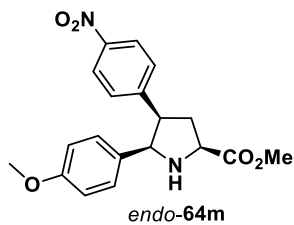
(2*S*,4*R*,5*R*)-Methyl 4-(4-nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (*endo*-64a)Racemic *exo* + *endo*

#	Time	Area	Height	Width	Area%	Symmetry
1	22.664	2612.2	53.7	0.8109	47.087	0.621
2	36.068	2935.5	30.8	1.5903	52.913	0.482

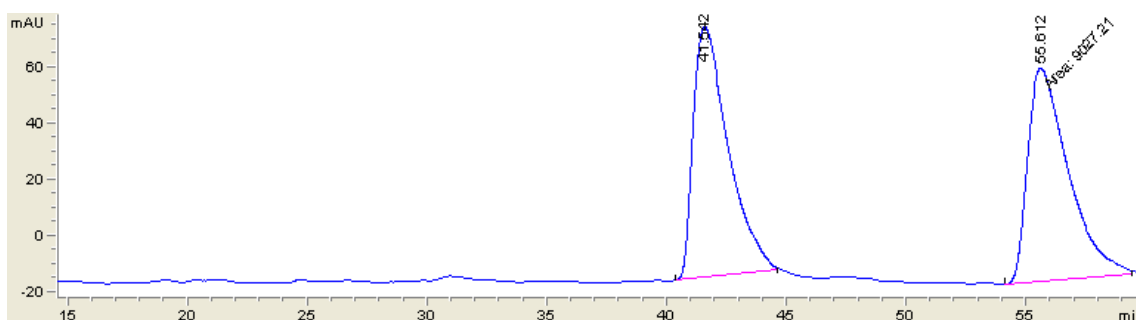
(+)-*endo*-64a: $\geq 98\%$ ee (+ minor *exo*-64a)

#	Time	Area	Height	Width	Area%	Symmetry
1	24.091	15660.5	278.7	0.9365	99.324	0.471
2	36.129	106.6	1.7	1.0395	0.676	0.785

(2*S*,4*R*,5*R*)-Methyl 5-(4-methoxyphenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate
(endo-64m)

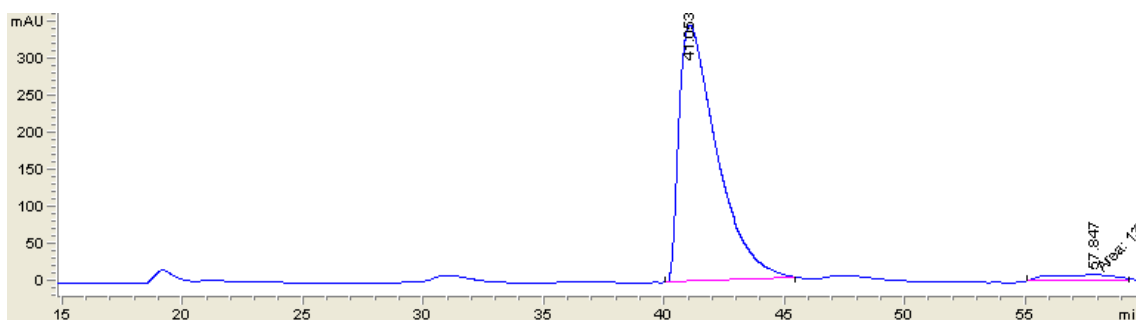


Racemic

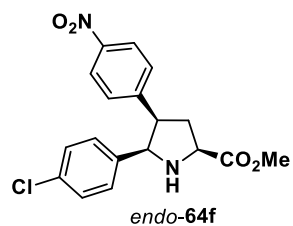
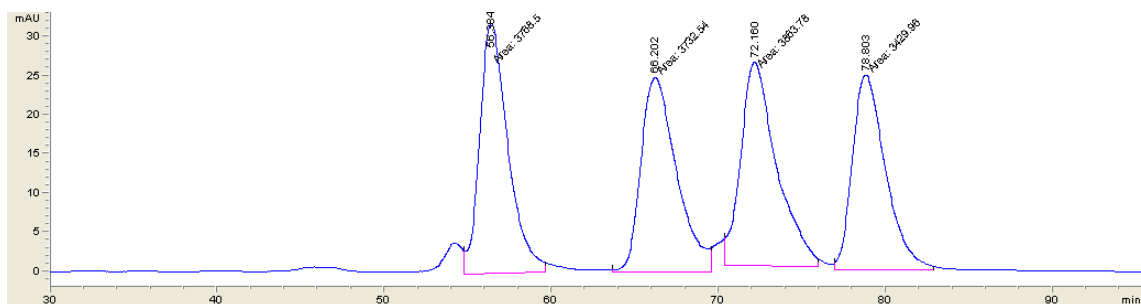


#	Time	Area	Height	Width	Area%	Symmetry
1	41.542	9685.9	90.6	1.7816	50.014	0.422
2	55.612	9680.4	76.9	2.0985	49.986	0.455

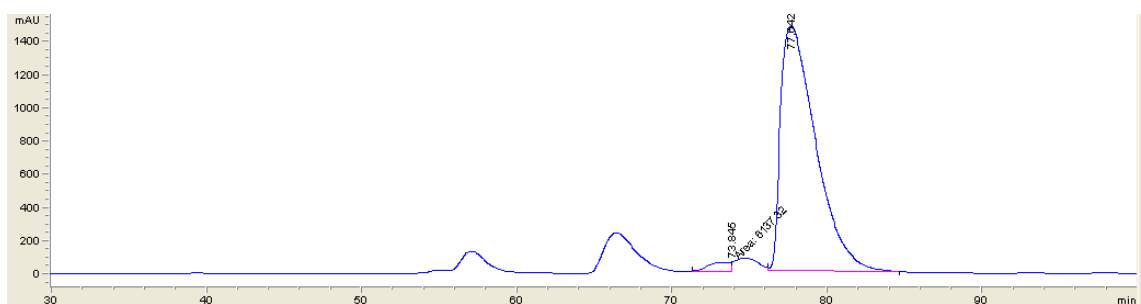
(-)-endo-64m: 93% ee



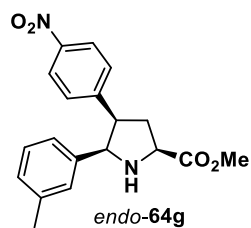
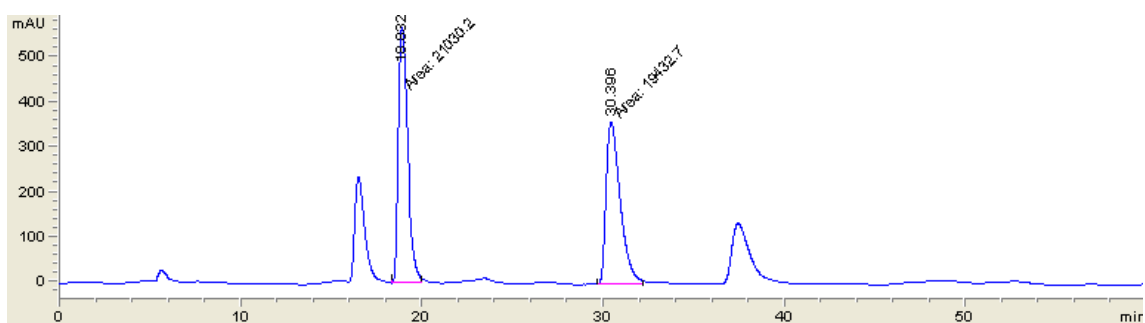
#	Time	Area	Height	Width	Area%	Symmetry
1	41.053	37310.4	346.6	1.5439	96.437	0.366
2	57.847	1378.3	7.5	3.0751	3.563	2.128

(2*S*,4*R*,5*R*)-Methyl 5-(4-chlorophenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (*endo*-64f)Racemic *exo* + *endo*

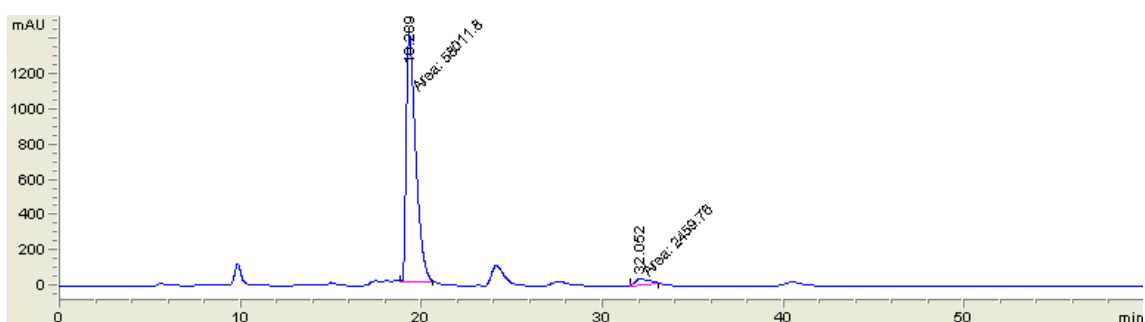
#	Time	Area	Height	Width	Area%	Symmetry
1	56.384	3768.5	31.9	1.968	25.472	0.665
2	66.202	3732.5	25	2.4929	25.229	0.651
3	72.16	3863.8	26.1	2.4719	26.116	0.619
4	78.803	3430	24.9	2.2994	23.184	0.652

(+)-*endo*-64f: 95% ee (+ minor *exo*-64f)

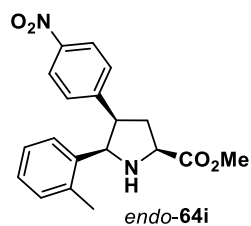
#	Time	Area	Height	Width	Area%	Symmetry
1	73.845	6137.3	57.4	1.7833	2.559	1.172
2	77.642	233724.1	1479.1	1.9015	97.441	0.4

(2*S*,4*R*,5*R*)-Methyl 4-(4-nitrophenyl)-5-(*m*-tolyl)pyrrolidine-2-carboxylate (*endo*-64g)Racemic *exo* + *endo*

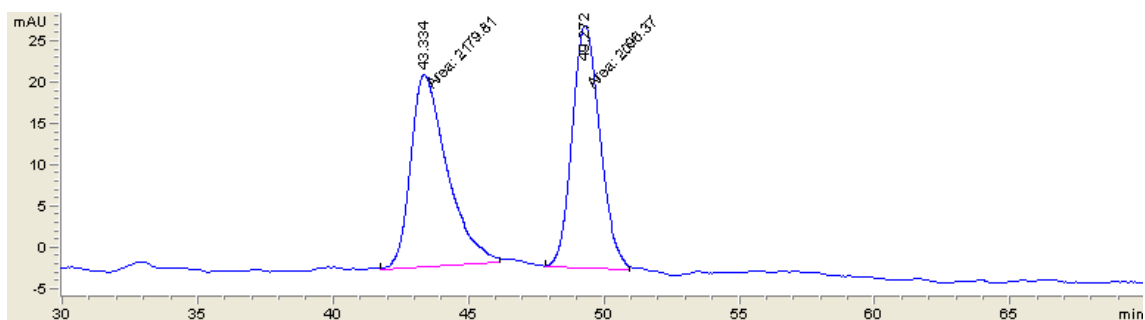
#	Time	Area	Height	Width	Area%	Symmetry
1	18.832	21030.2	567.5	0.6176	51.974	0.58
2	30.396	19432.7	361.8	0.8951	48.026	0.534

(+)-*endo*-64g: 92% ee (+ minor *exo*-64g)

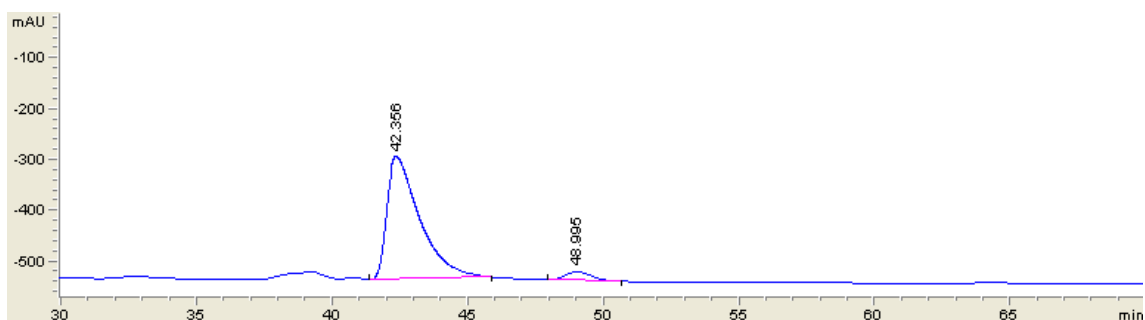
#	Time	Area	Height	Width	Area%	Symmetry
1	19.289	58011.8	1443.2	0.6699	95.932	0.485
2	32.052	2459.8	39.3	1.0435	4.068	0.493

(2*S*,4*R*,5*R*)-Methyl 4-(4-nitrophenyl)-5-(*o*-tolyl)pyrrolidine-2-carboxylate (*endo*-64i)

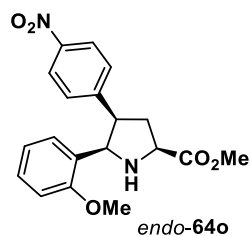
Racemic



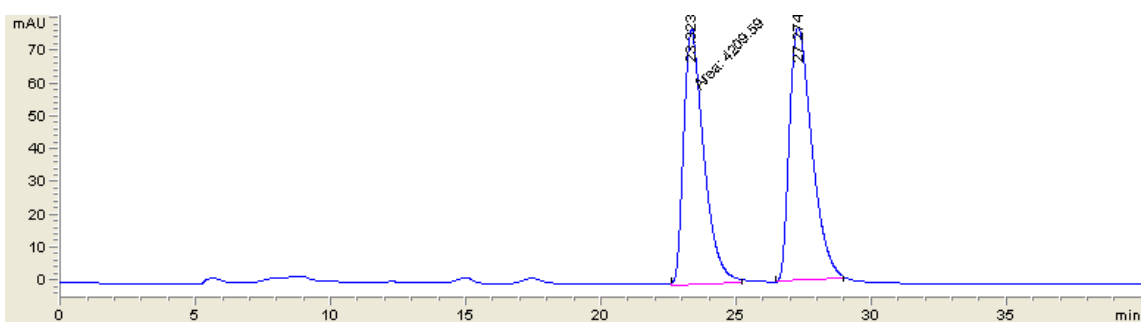
#	Time	Area	Height	Width	Area%	Symmetry
1	43.334	2179.8	23.3	1.5572	50.976	0.555
2	49.272	2096.4	29.5	1.1859	49.024	0.844

(+)-endo-64i: 90% ee

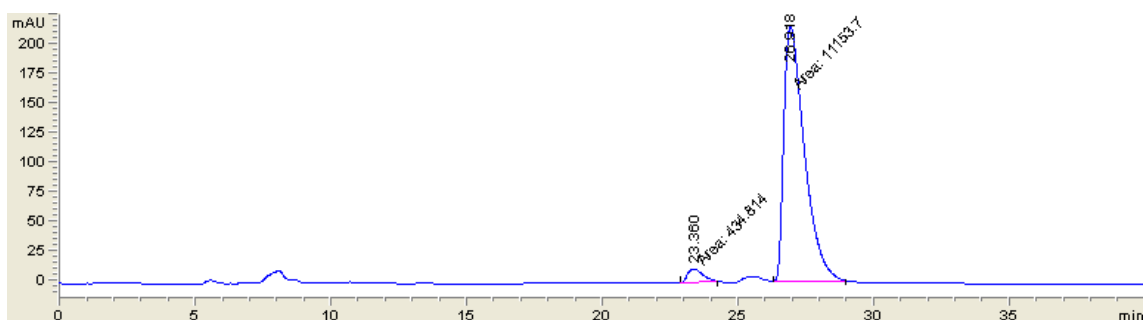
#	Time	Area	Height	Width	Area%	Symmetry
1	42.356	20608.3	241.2	1.213	94.766	0.408
2	48.995	1138.3	17.3	0.7818	5.234	0.817

(2*S*, 4*R*, 5*R*)-Methyl 5-(2-methoxyphenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate
(endo-64o)

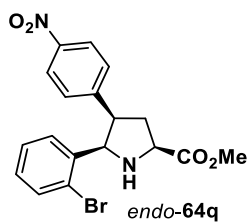
Racemic



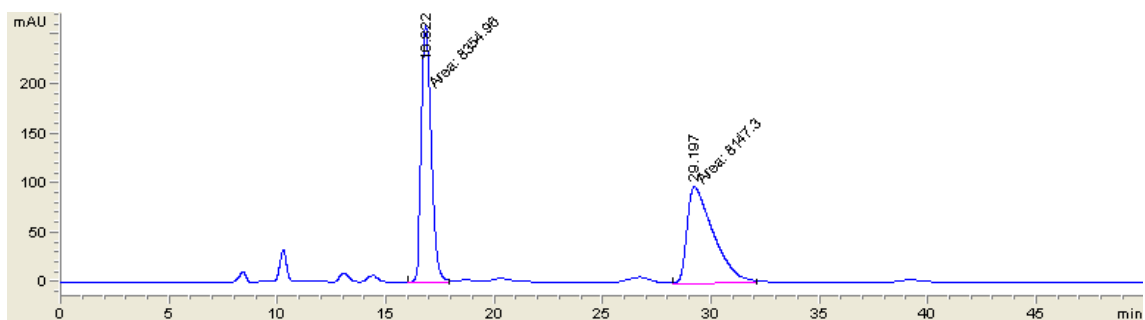
#	Time	Area	Height	Width	Area%	Symmetry
1	23.323	4209.6	77.8	0.9018	48.884	0.611
2	27.274	4401.8	77.4	0.8736	51.116	0.577

(+)-endo-64o: 92% ee

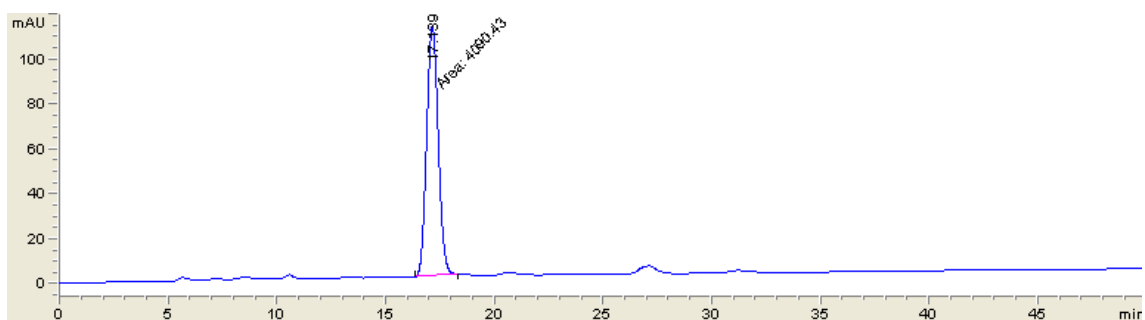
#	Time	Area	Height	Width	Area%	Symmetry
1	23.36	434.8	11	0.6613	3.752	0.696
2	26.918	11153.7	214.9	0.865	96.248	0.454

(2*S*, 4*R*, 5*R*)-Methyl 5-(2-bromophenyl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (*endo*-64q)

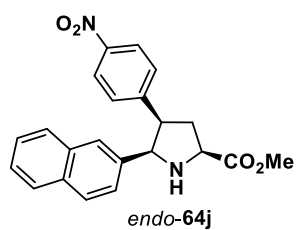
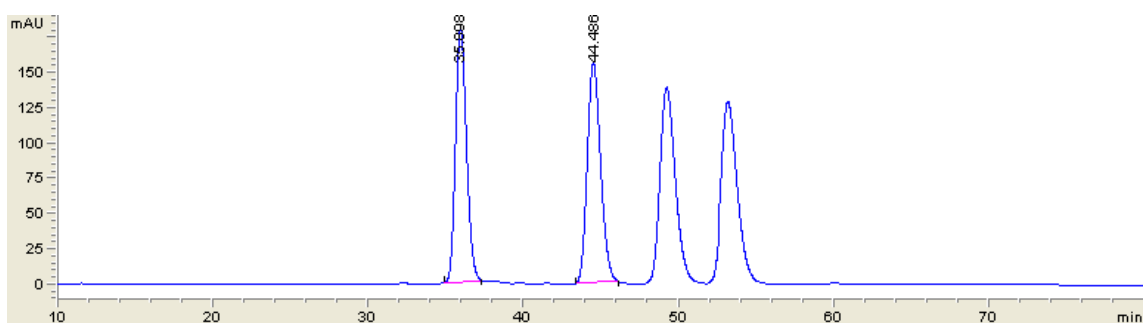
Racemic



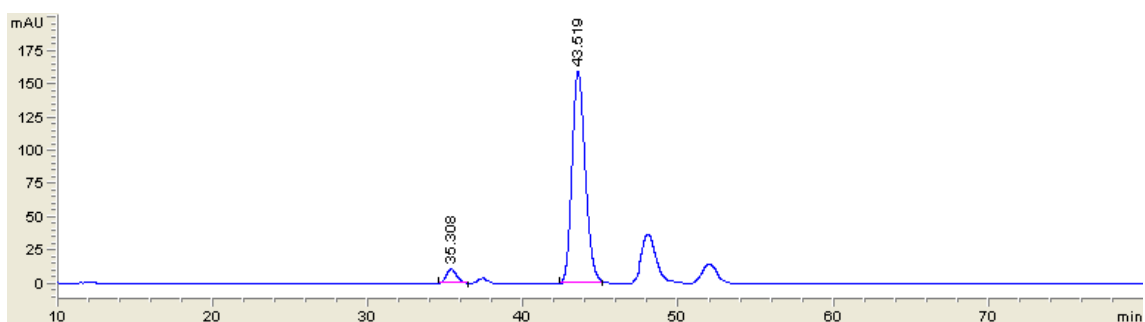
#	Time	Area	Height	Width	Area%	Symmetry
1	16.822	8355	259.4	0.5368	50.629	0.787
2	29.197	8147.3	97.3	1.395	49.371	0.377

(+)-endo-64q: $\geq 98\%$ ee

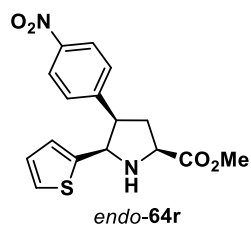
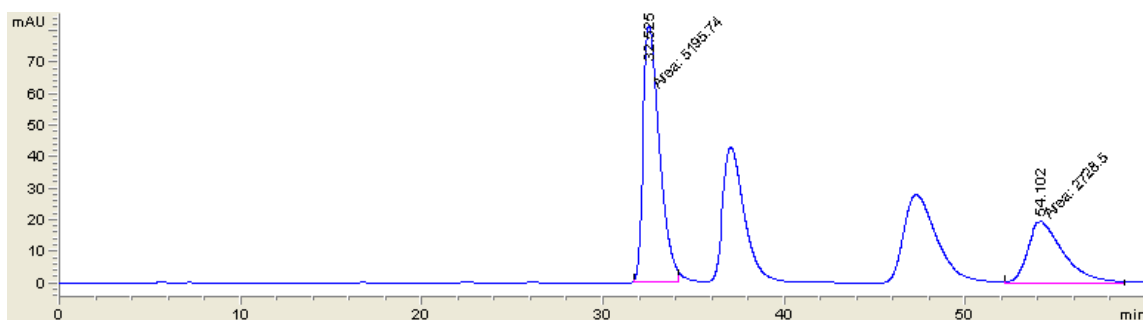
#	Time	Area	Height	Width	Area%	Symmetry
1	17.139	4090.4	111.2	0.6131	100.000	0.931

(2S,4R,5R)-Methyl 5-(naphthalen-2-yl)-4-(4-nitrophenyl)pyrrolidine-2-carboxylate (*endo*-64j)Racemic *exo* + *endo*

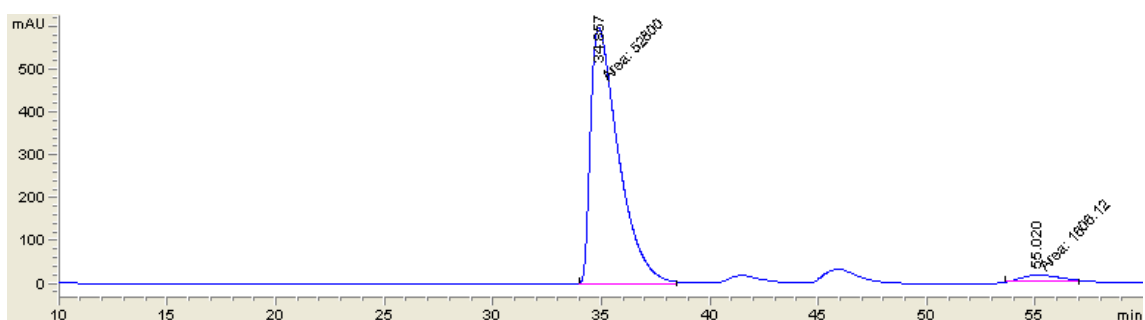
#	Time	Area	Height	Width	Area%	Symmetry
1	35.898	8724.8	180.7	0.7453	48.651	0.804
2	44.486	9208.7	155.9	0.9133	51.349	0.797

(+)-*endo*-64j: 90% ee (+ minor *exo*-64j)

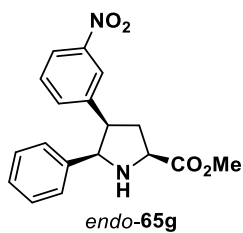
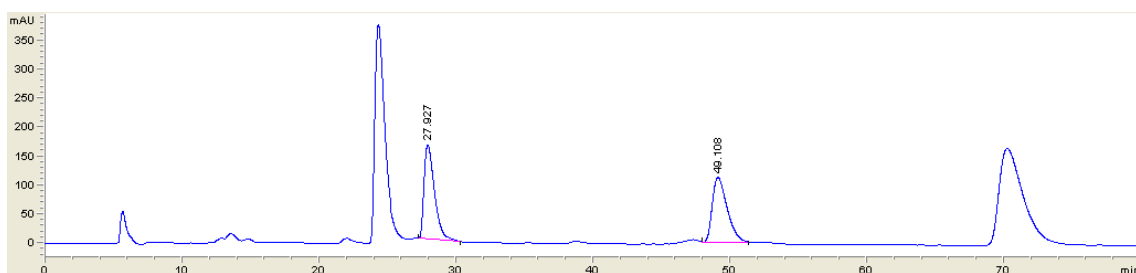
#	Time	Area	Height	Width	Area%	Symmetry
1	35.308	473.6	10.4	0.6955	4.866	0.848
2	43.519	9258.9	159.1	0.8991	95.134	0.799

(2S,4R,5R)-Methyl 4-(4-nitrophenyl)-5-(thiophen-2-yl)pyrrolidine-2-carboxylate (*endo*-64r)Racemic *exo* + *endo*

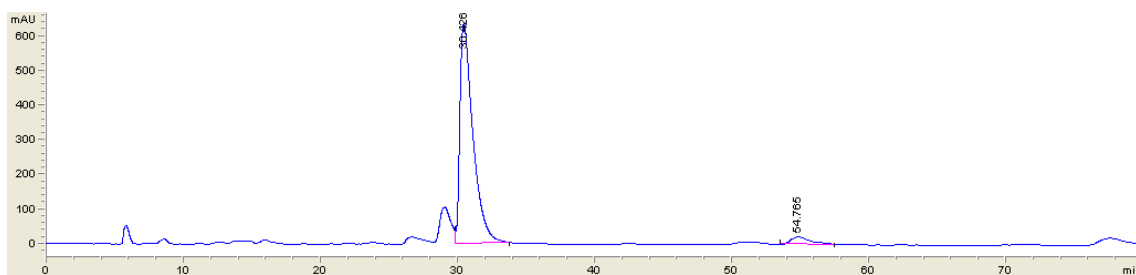
#	Time	Area	Height	Width	Area%	Symmetry
1	32.525	5195.7	81.3	1.0652	65.568	0.597
2	54.102	2728.5	19.6	2.3219	34.432	0.556

(+)-*endo*-64r: 94% ee (+ minor *exo*-64r)

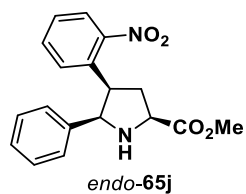
#	Time	Area	Height	Width	Area%	Symmetry
1	34.857	52800	598	1.4717	97.048	0.391
2	55.02	1606.1	14.1	1.9023	2.952	0.636

(2*S*,4*R*,5*R*)-Methyl 4-(3-nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (*endo*-65g)Racemic *exo* + *endo*

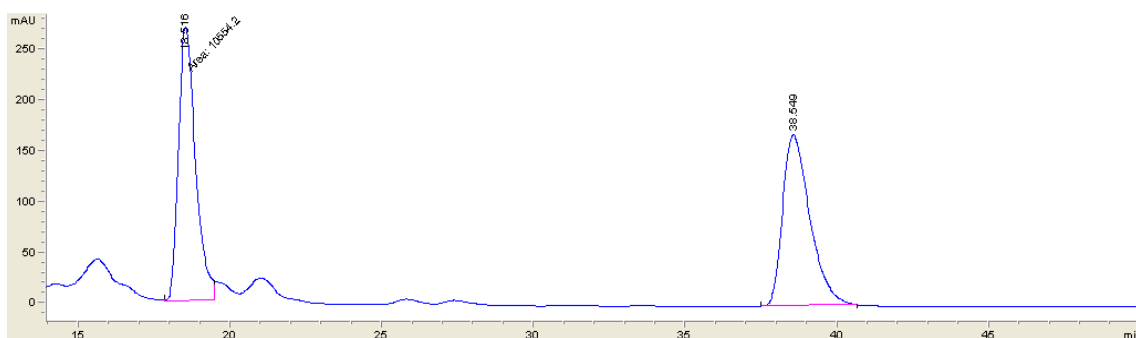
#	Time	Area	Height	Width	Area%	Symmetry
1	27.927	8617.3	162.7	0.7959	50.596	0.519
2	49.108	8414.1	112	1.0883	49.404	0.58

(-)-*endo*-65g: 90% *ee*

#	Time	Area	Height	Width	Area%	Symmetry
1	30.426	41806.3	635.6	0.9533	94.979	0.393
2	54.765	2210	21.3	1.2344	5.021	0.514

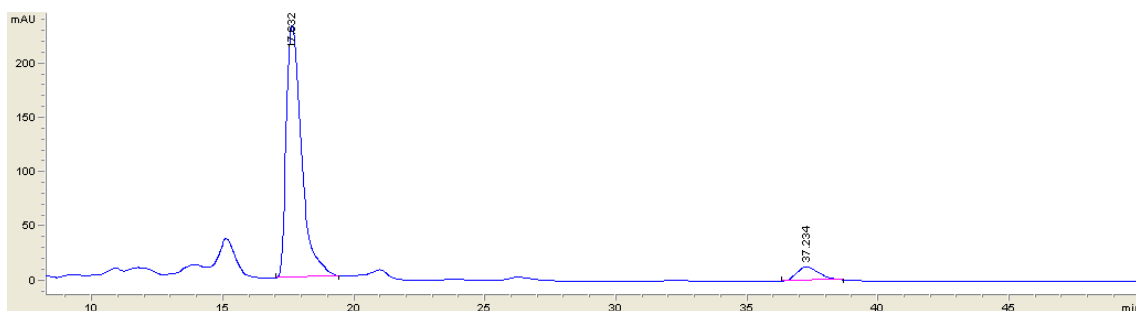
(2*S*,4*R*,5*R*)-Methyl 4-(2-nitrophenyl)-5-phenylpyrrolidine-2-carboxylate (*endo*-65j)

Racemic

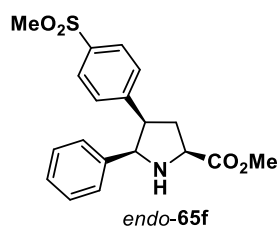


#	Time	Area	Height	Width	Area%	Symmetry
1	18.516	10554.2	268.9	0.6541	50.078	0.687
2	38.549	10521.3	168.2	0.9396	49.922	0.607

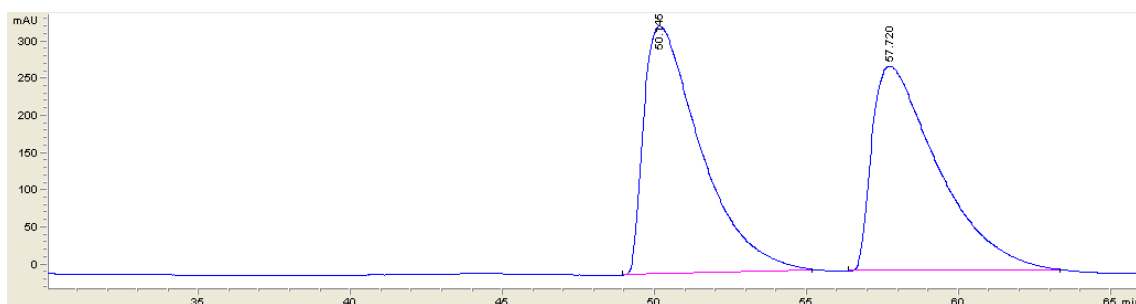
(-)-*endo*-65j: 85% *ee*



#	Time	Area	Height	Width	Area%	Symmetry
1	17.632	9345.5	232.3	0.6154	92.452	0.584
2	37.234	763	12.7	0.8506	7.548	0.693

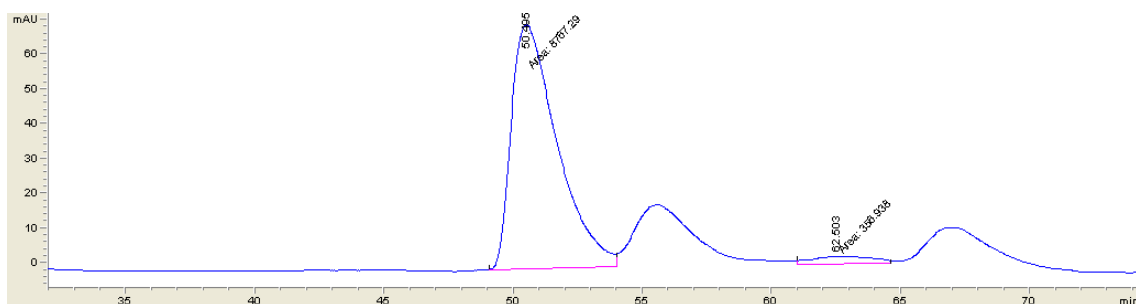
(2*S*,4*R*,5*R*)-Methyl 4-(4-(methylsulfonyl)phenyl)-5-phenylpyrrolidine-2-carboxylate (*endo*-65f)

Racemic

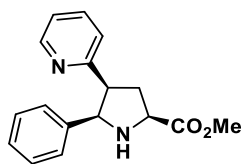


#	Time	Area	Height	Width	Area%	Symmetry
1	50.145	43397.6	333.2	1.8014	51.065	0.36
2	57.72	41588	274.6	2.0331	48.935	0.341

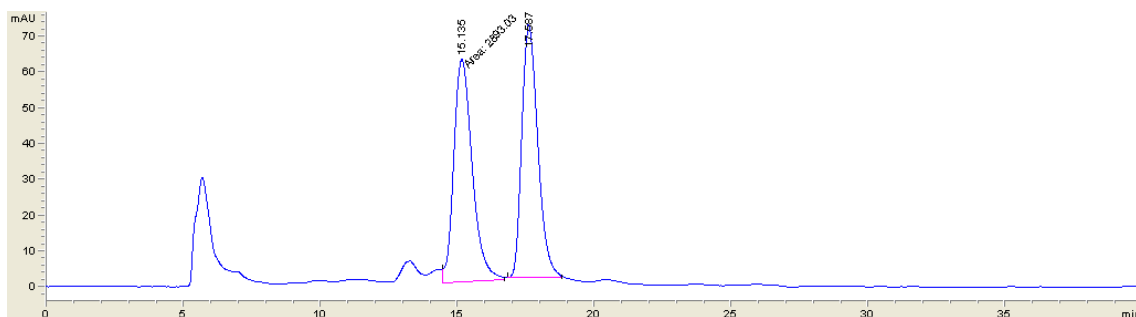
(+)-*endo*-65f: 92% ee (+ minor *exo*-65f)



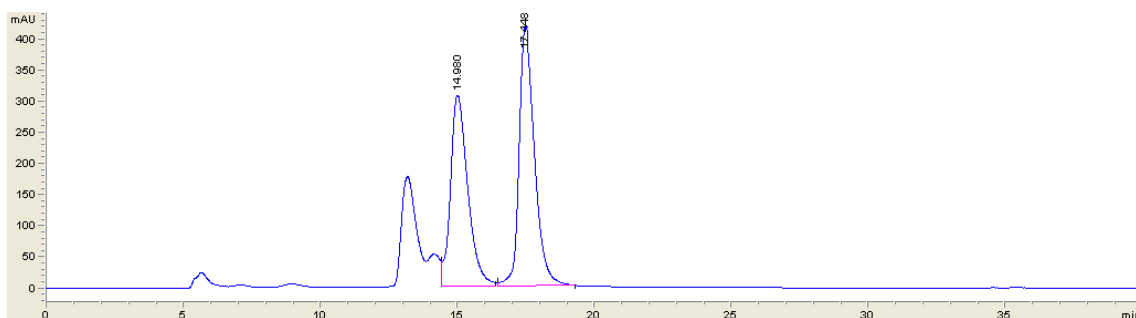
#	Time	Area	Height	Width	Area%	Symmetry
1	50.495	8767.3	70.5	2.0734	96.088	0.474
2	62.503	356.9	2.2	2.7386	3.912	0.696

(2*S*,4*S*,5*R*)-Methyl 5-phenyl-4-(pyridin-2-yl)pyrrolidine-2-carboxylate (*endo*-66a)*endo*-66a

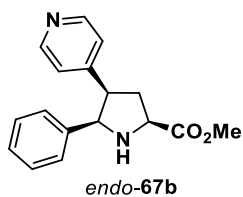
Racemic



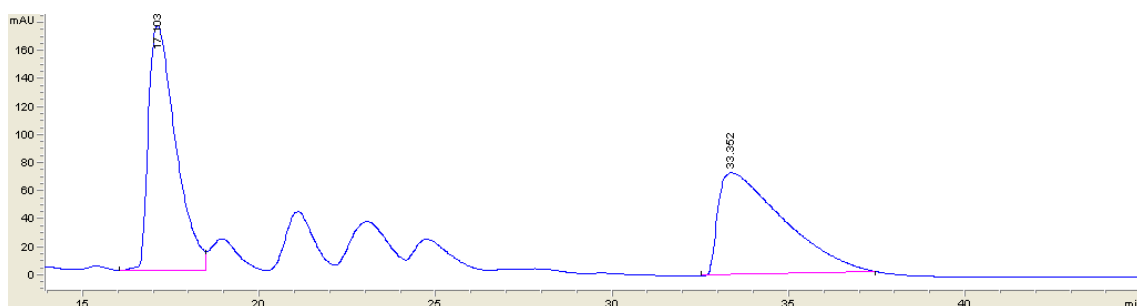
#	Time	Area	Height	Width	Area%	Symmetry
1	15.135	2893	62.1	0.7762	49.060	0.728
2	17.587	3003.9	70.6	0.6725	50.940	0.755

endo-66a: 12% ee

#	Time	Area	Height	Width	Area%	Symmetry
1	14.98	13313.8	306.8	0.6602	43.811	0.638
2	17.448	17075.1	417.7	0.6289	56.189	0.632

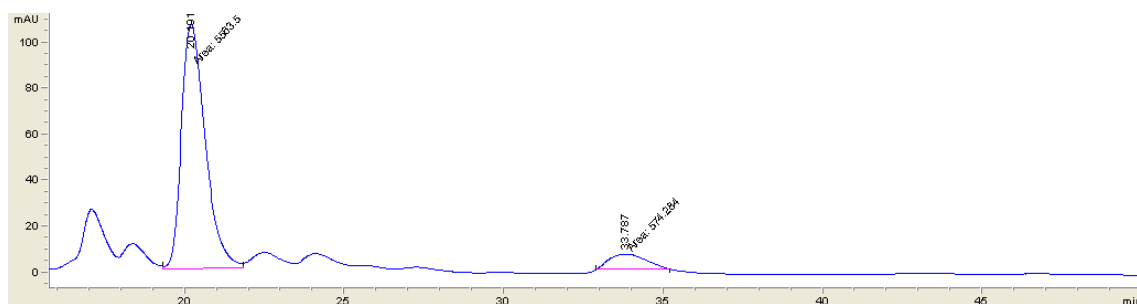
(2*S*,4*R*,5*R*)-Methyl 5-phenyl-4-(pyridin-4-yl)pyrrolidine-2-carboxylate (*endo*-67b)

Racemic



#	Time	Area	Height	Width	Area%	Symmetry
1	17.103	9444.7	174.5	0.8253	50.140	0.468
2	33.352	9392	73	1.7143	49.860	0.228

(+)-*endo*-67b: 80% ee



#	Time	Area	Height	Width	Area%	Symmetry
1	20.191	5563.5	106.3	0.8722	90.643	0.676
2	33.787	574.3	7	1.376	9.357	0.74