

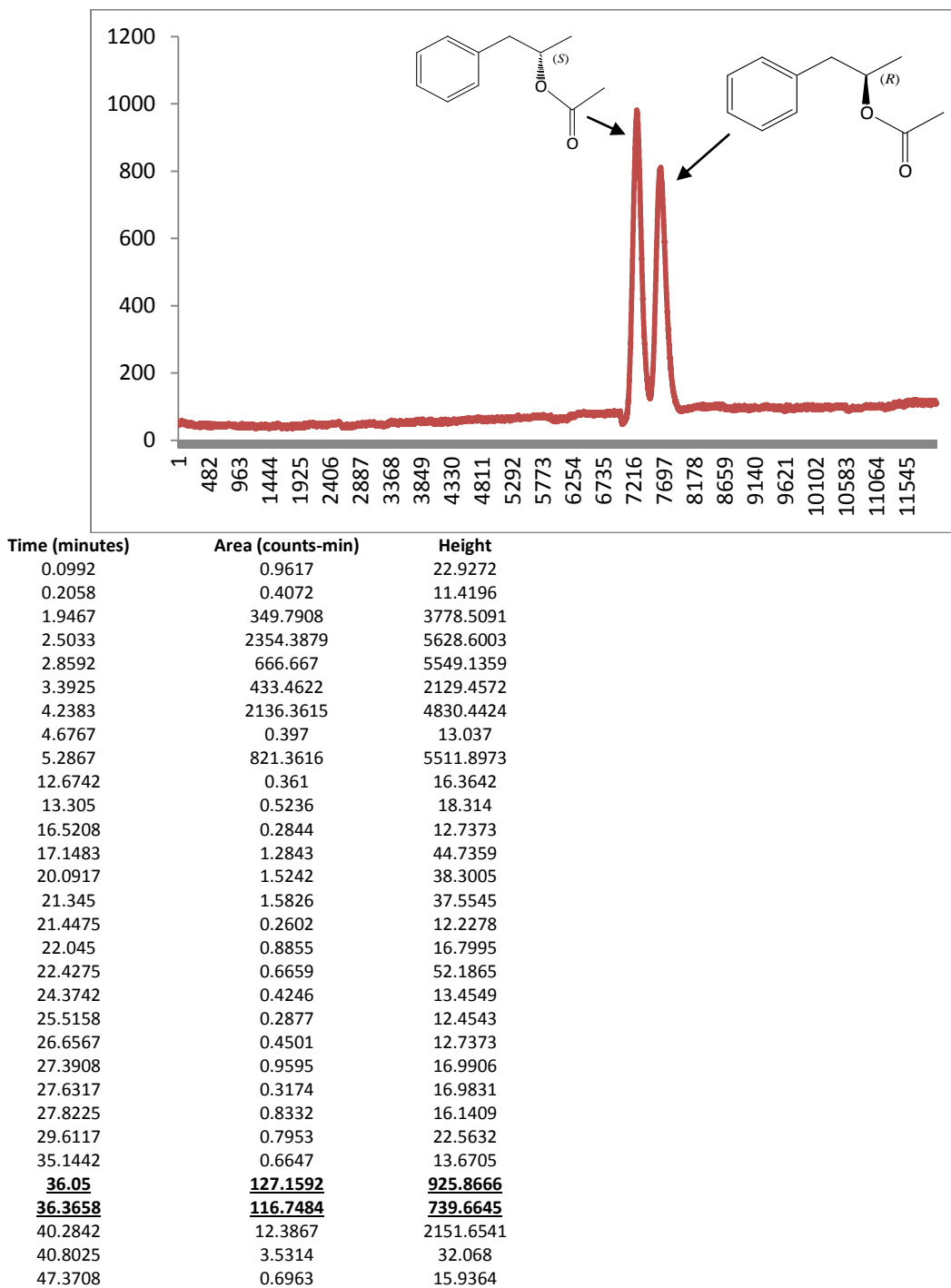
## Supporting Information

For

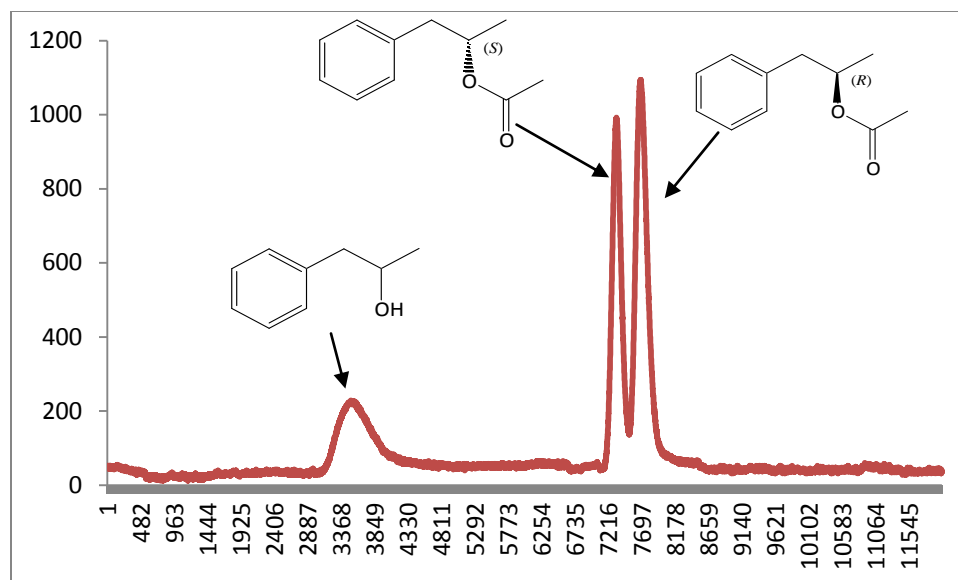
### **Racemization of Enantiopure Secondary Alcohols by *Thermoanaerobacter ethanolicus* Secondary Alcohol Dehydrogenase**

Musa M. Musa\* and Robert S. Phillips

## Chiral GC chromatograms

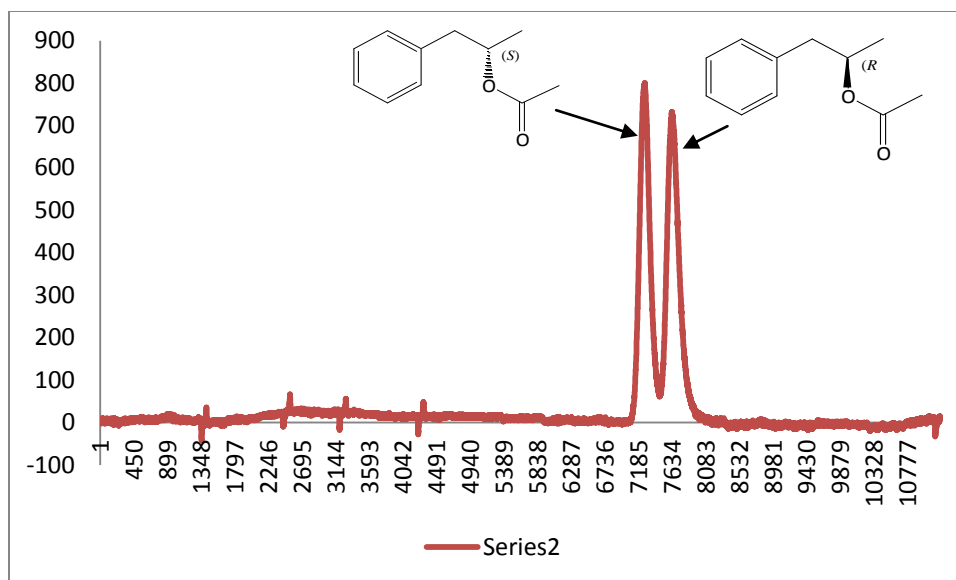


**Figure S1.** GC Chromatogram for the acetate derivative of racemization product of (*S*)-**1a**, entry 1 in Table 1



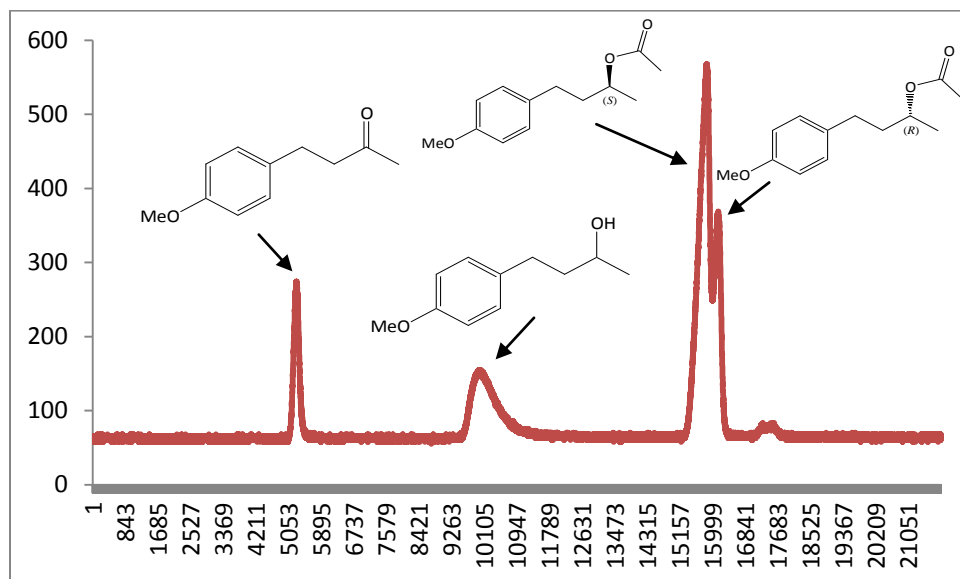
Time (minutes)	Area (counts-min)	Height
0.0667	0.4033	9.7384
0.4892	0.1444	7.6424
0.7908	0.1369	10.1898
1.3558	2.2779	15.3108
1.9475	418.5084	4224.4314
2.5192	2529.7036	5561.5977
2.9267	135.3798	3306.0005
3.3083	507.2543	1664.3915
4.3608	2290.5652	4498.9816
5.3683	1728.5194	5355.8961
7.8775	0.2373	13.6572
9.0742	0.2208	7.6424
9.235	1.0943	22.9272
9.4675	1.1835	18.4049
11.8692	0.3269	10.6993
12.385	0.2388	14.2764
12.495	0.2273	11.4636
14.3125	0.2972	12.1004
17.42	0.2112	11.782
20.7908	0.2887	11.6297
22.2283	0.2191	10.1898
26.4983	0.3036	12.7373
26.9575	1.1039	19.1375
32.8408	16.0405	70.0787
35.675	0.4101	12.0014
<b>36.1033</b>	<b>125.1175</b>	<b>942.5087</b>
<b>36.3908</b>	<b>170.8634</b>	<b>1030.5821</b>
36.7	0.1932	11.4164
39.575	0.2442	15.0532
40.2217	0.2052	10.3676
41.4742	1.7875	54.6745
47.6625	0.4033	14.2358
47.8025	0.3016	12.3454
48.735	0.2218	14.5259
48.9425	0.8089	56.9994
49.9575	0.5498	61.7969

**Figure S2.** GC Chromatogram for the acetate derivative of racemization product of (*R*)-**1a**, entry 3 in Table 1



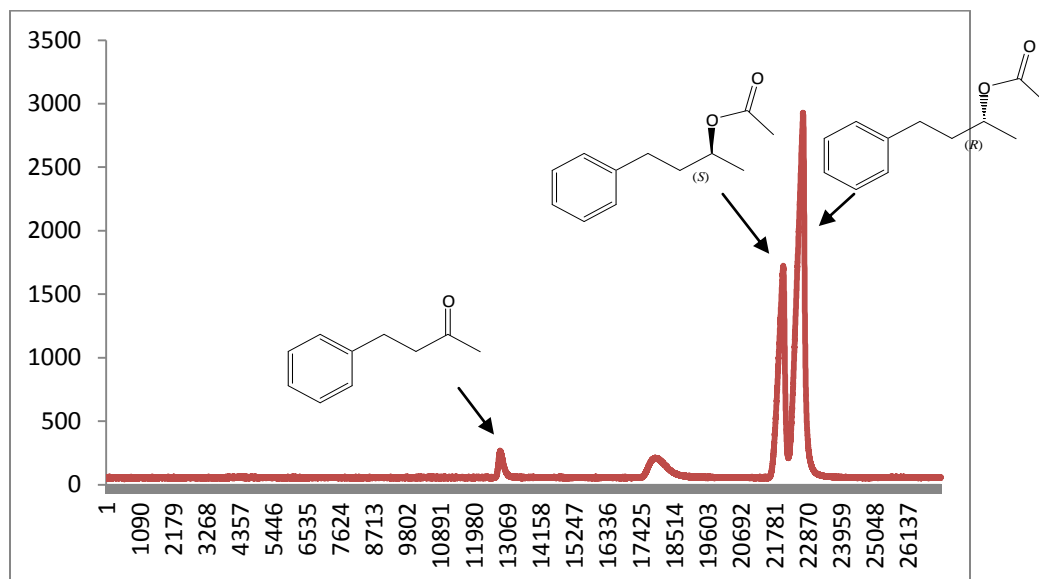
Time (minutes)	Area (counts-min)	Height
1.2567	1.6916	43.4151
1.9283	366.1422	3664.306
2.4992	2781.232	5805.6096
3.1717	319.3422	1250.6193
3.7008	989.8287	5393.098
4.2733	0.5392	13.8953
5.5633	0.5456	36.5136
9.8008	0.2187	10.1898
11.545	0.5252	34.6966
11.9108	0.3994	33.4906
12.655	1.6155	40.7594
12.7192	0.1858	14.4356
13.7475	0.3583	26.6145
14.5517	0.9606	34.0188
16.215	1.9223	47.1624
16.3233	0.5944	11.9329
17.7667	0.3234	28.8455
21.3442	1.9467	34.0555
23.7592	0.6084	39.3441
24.4092	0.542	35.3986
24.9667	0.4203	32.7587
26.2017	2.8119	42.0979
27.7017	1.6471	40.547
31.1208	1.3422	44.5332
31.2258	0.1874	7.8342
32.1058	1.9562	52.1919
32.1517	0.1827	8.3916
32.6558	0.4656	32.4094
33.5892	2.3798	54.9096
34.9775	0.1679	7.6424
<b>36.0525</b>	<b>109.6789</b>	<b>794.8509</b>
<b>36.3525</b>	<b>110.705</b>	<b>713.578</b>
36.6575	0.2271	17.9384
36.9817	0.2369	12.5553

**Figure S3.** GC Chromatogram for the acetate derivative of (*rac*)-**1a**



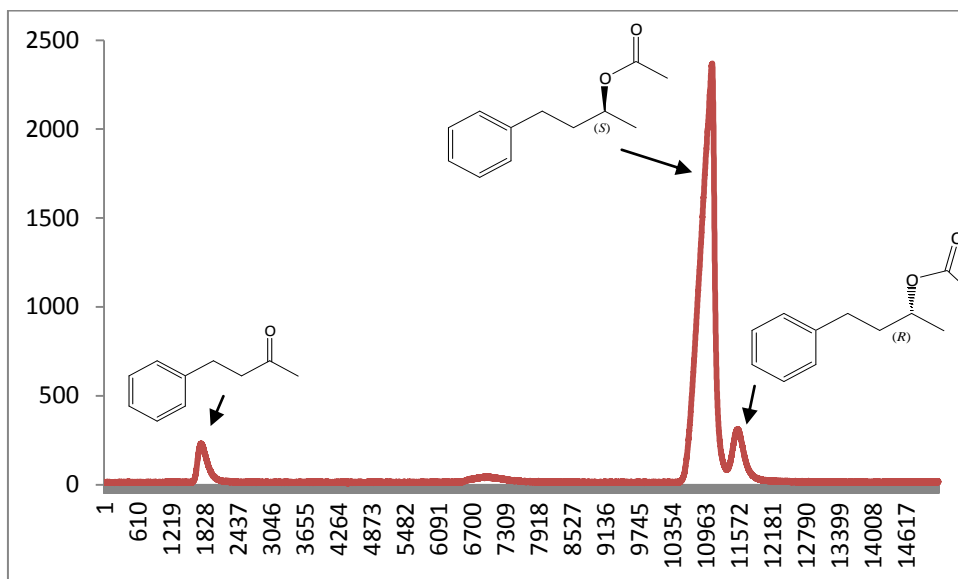
Time (minutes)	Area (counts-min)	Height
1.9075	305.7196	4148.0542
2.3883	2445.1103	6055.5015
2.7367	959.2309	3383.1827
3.3575	2184.2912	6292.9627
46.9975	19.2684	3441.6185
54.0358	30.8455	214.2295
57.6125	0.1348	8.2651
57.8675	4.7064	25.3154
<b><u>62.86</u></b>	<b><u>140.4935</u></b>	<b><u>504.397</u></b>
<b><u>63.115</u></b>	<b><u>54.5814</u></b>	<b><u>305.6952</u></b>

**Figure S4.** GC Chromatogram for the acetate derivative of racemization product of (*S*)-**2a**, entry 5 in Table 1



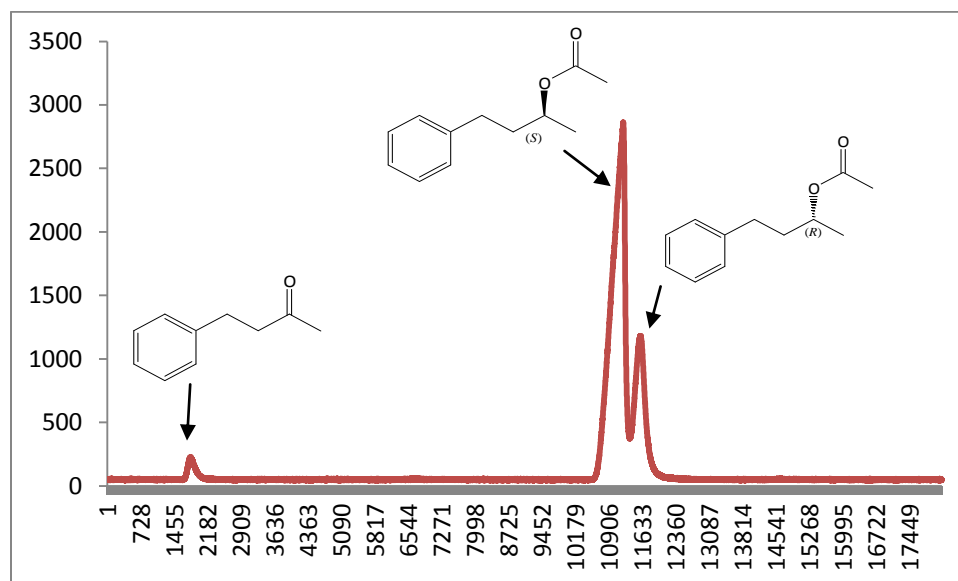
Time (minutes)	Area (counts-min)	Height
1.8025	10.7789	203.755
1.9275	32.1914	312.7838
2.0958	402.8512	5533.331
2.3525	403.3477	3171.406
2.7825	3242.5474	6505.394
3.7467	3008.5307	6446.164
41.4258	32.9631	211.8117
45.5408	8.5393	48.3208
<u>49.1142</u>	<u>345.8414</u>	<u>1664.03</u>
<u>49.6558</u>	<u>710.6042</u>	<u>2855.1</u>

**Figure S5.** GC Chromatogram for the acetate derivative of racemization product of (*R*)-**3a**, entry 6 in Table 1



Time (minutes)	Area (counts-min)	Height
1.9367	396.8837	3715.5907
2.5008	2836.34	6274.0251
2.8658	1303.3834	6305.0684
3.075	1137.9861	5758.2504
4.2283	2662.2202	5724.2249
6.9225	0.1381	10.0314
7.0017	1.781	24.1582
7.2092	1.8066	22.9271
15.1417	0.1607	8.2523
15.2708	3.842	33.9512
41.4708	36.6049	216.9221
<b><u>49.2475</u></b>	<b><u>600.8117</u></b>	<b><u>2346.7044</u></b>
<b><u>49.6292</u></b>	<b><u>57.7375</u></b>	<b><u>283.3388</u></b>
49.9933	0.087	10.121

**Figure S6.** GC Chromatogram for the acetate derivative of racemization product of (*S*)-**3a**, entry 7 in Table 1



Time (minutes)	Area (counts-min)	Height
1.8367	7.0724	123.0825
1.9708	47.1216	436.9046
2.1475	381.9928	5297.1082
2.4183	720.7012	4038.5892
2.8633	1138.8392	6276.2755
3.4108	563.0209	2972.0552
4.22	2524.3207	5697.7086
41.5125	27.019	180.1739
<u>49.3592</u>	<u>781.5961</u>	<u>2799.7439</u>
<u>49.6633</u>	<u>248.0692</u>	<u>1108.6941</u>

**Figure S7.** GC Chromatogram for the acetate derivative of racemization product of (*S*)-**3a**, entry 8 in Table 1