

Figure S1. Chiral separations of Ibuprofen on permethylated  $\alpha$ -CD containing stationary phase. Conditions: Instrument, Shimadzu QP5000 GC/MS; column, 25 m  $\times$  0.22 mm FSOT; stationary phase, Alpha Dex (0.25  $\mu$ m); carrier, He (50 cm/sec); analysis temperature, 130 $^{\circ}$  C; solvent concentration 2 mg/ml. on permethylated  $\alpha$ -CD containing stationary phase. Enantiomeric ratio is S/R = 1.5

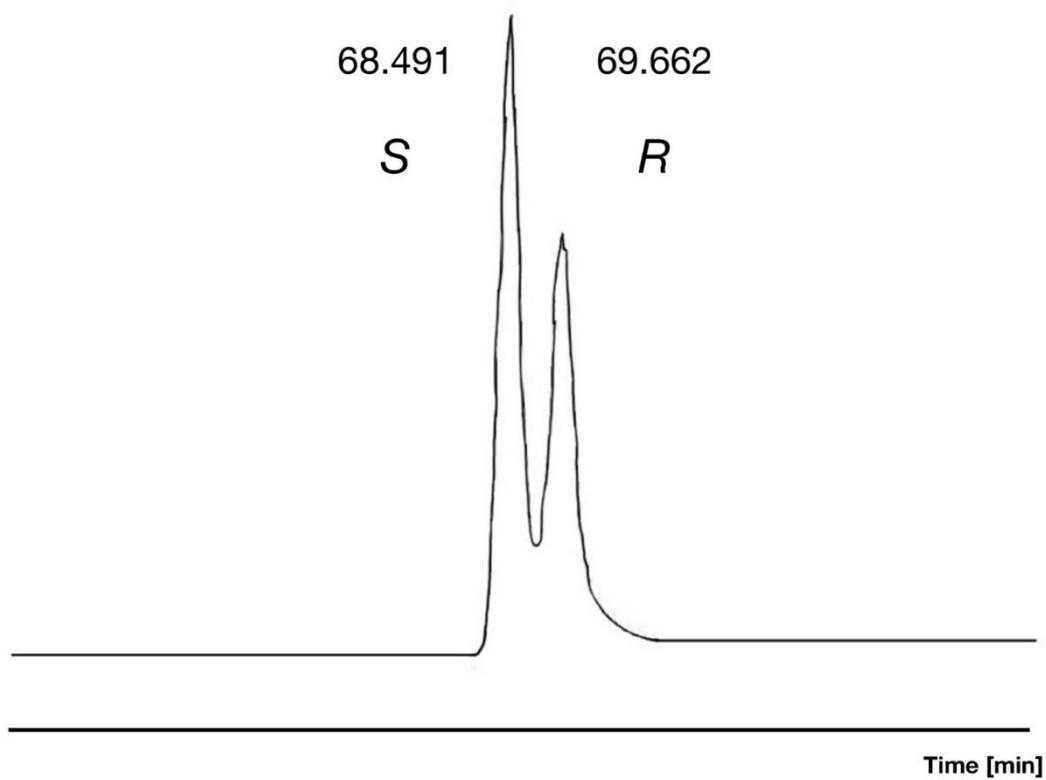


Figure S2. Partially chiral separations of Ibuprofen on permethylated  $\gamma$ -CD containing stationary phase. Conditions: Instrument, Shimadzu QP5000 GC/MS; column, 25 m  $\times$  0.22 mm FSOT; stationary phase, Gamma Dex (0.25  $\mu$ m); carrier, He (50 cm/sec); analysis temperature, 140 $^{\circ}$  C; solvent concentration 2 mg/ml. on permethylated  $\gamma$ -CD containing stationary phase. Enantiomeric ratio is S/R = 2.

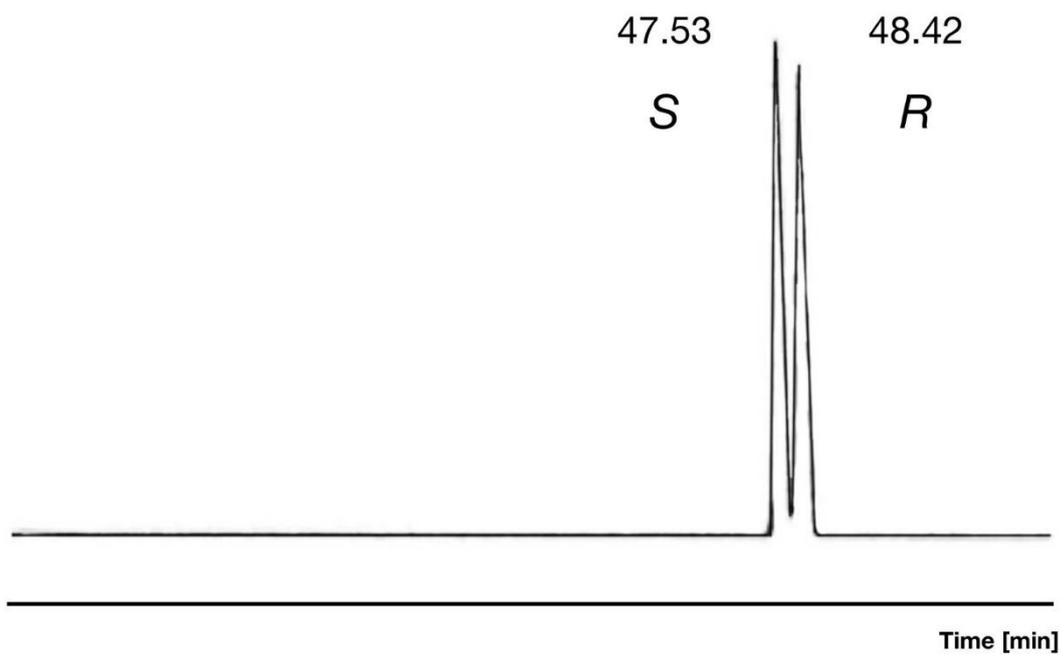


Figure S3. Chiral separations of Ibuprofen methyl ester on permethylated  $\beta$ -CD containing stationary phase. Conditions: Instrument, Shimadzu QP5000 GC/MS; column, 25 m x 0.22 mm FSOT; stationary phase, Cydex-B (0.25  $\mu$ m); carrier, He (50 cm/sec); analysis temperature, 100 $^{\circ}$  C; solvent concentration 2 mg/ml. on permethylated  $\beta$ -CD containing stationary phase. Enantiomeric ratio is S/R = 1 [24]

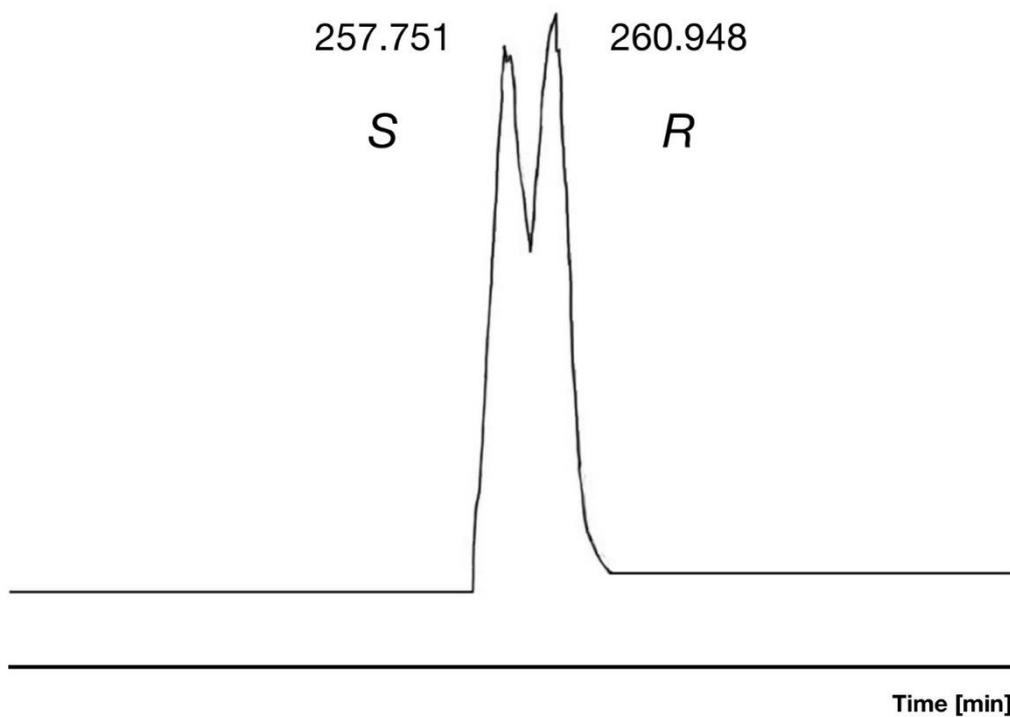


Figure S4. Partially chiral separations of Ibuprofen isobutyl ester on permethylated  $\gamma$ -CD containing stationary phase. Conditions: Instrument, Shimadzu QP5000 GC/MS; column, 25 m x 0.22 mm FSOT; stationary phase, Gamma Dex (0.25  $\mu$ m); carrier, He (50 cm/sec); analysis temperature, 100° C; solvent concentration 2 mg/ml. on permethylated  $\gamma$ -CD containing stationary phase. Enantiomeric ratio is S/R = 1

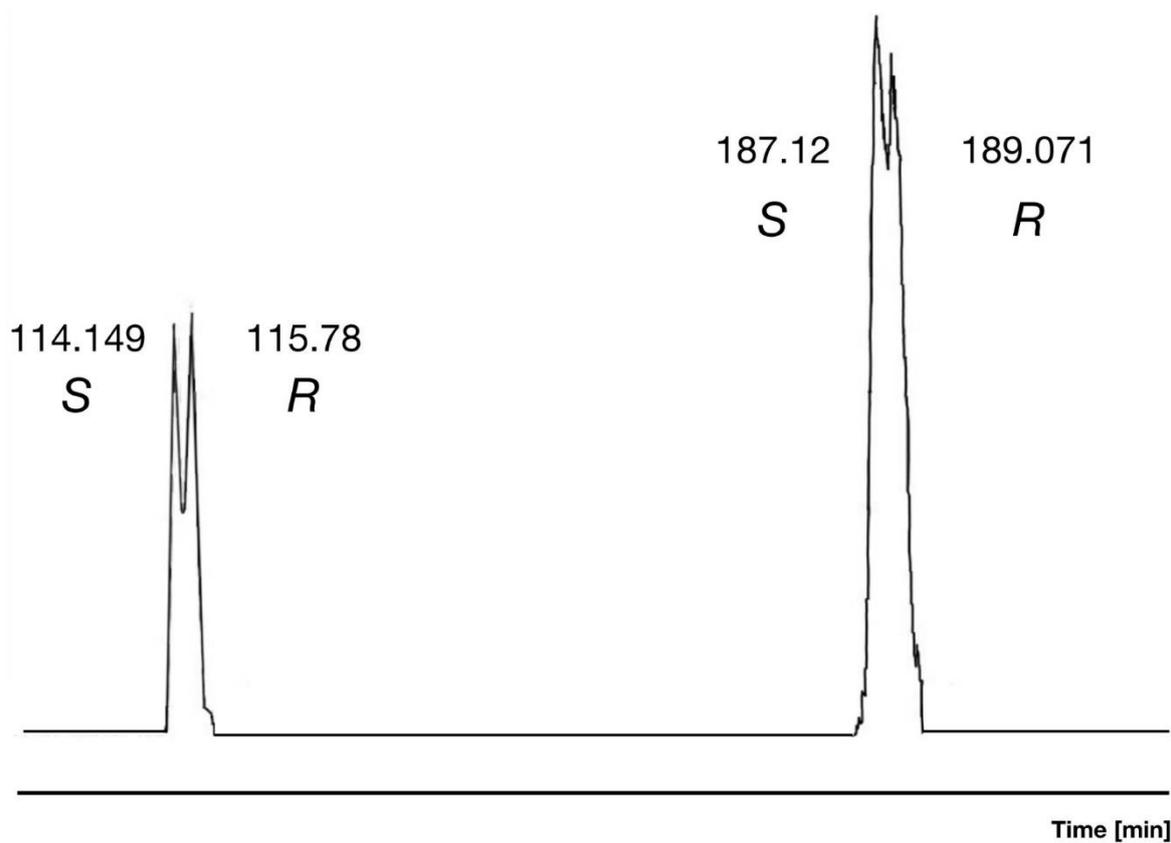


Figure S5. Chiral separations of isopropyl and propyl esters of Ibuprofen on permethylated  $\beta$ -CD containing stationary phase. Conditions: Instrument, Shimadzu QP5000 GC/MS; column, 25 m x 0.22 mm FSOT; stationary phase, Cydex-B (0.25  $\mu$ m); carrier, He (50 cm/sec); analysis temperature, 100 $^{\circ}$  C; solvent concentration 2 mg/ml. on permethylated  $\beta$ -CD containing stationary phase. Enantiomeric ratio is S/R = 1