Supporting Information for:

Crystal structure analyses facilitate understanding of synthetic protocols in the preparation of 6,6'-dibromo substituted BINOL compounds

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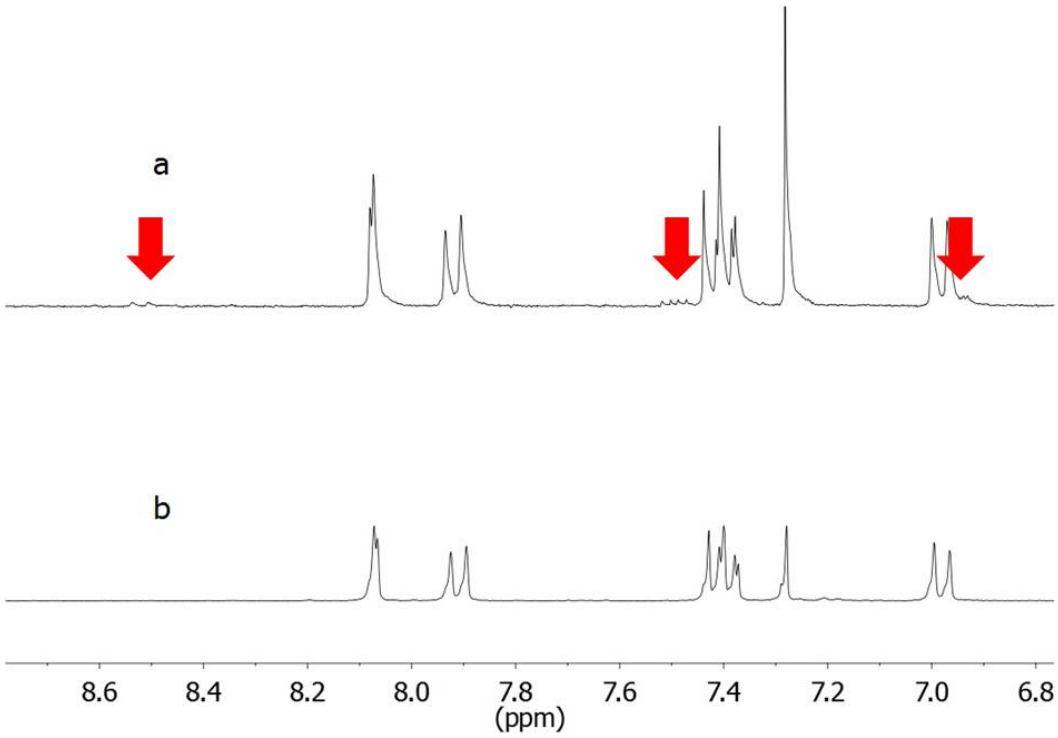


Figure S1. ^{1}H-NMR spectra of (*RS*)-**2** before (a) and after crystallization from toluene/cyclohexane (b).

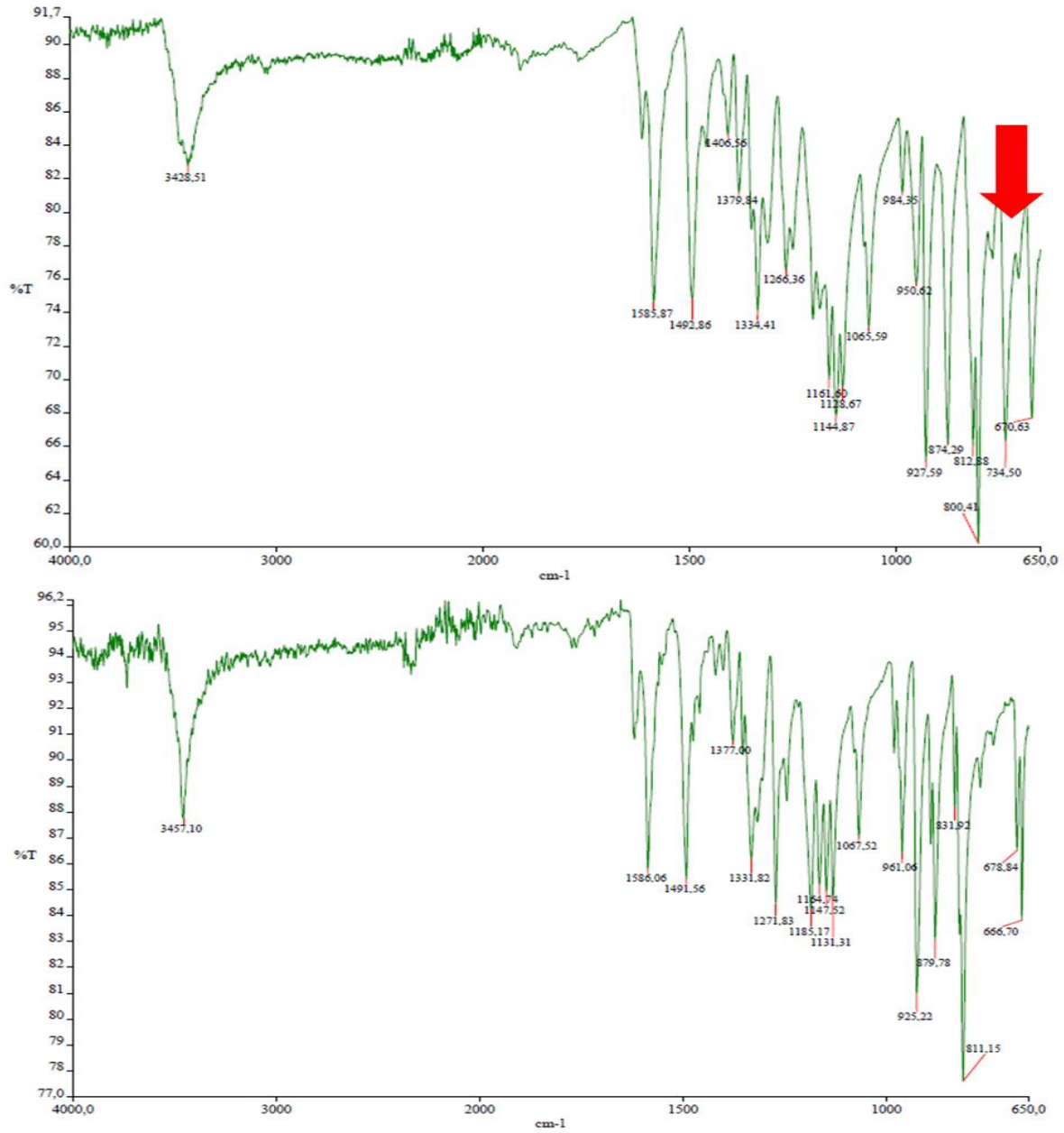


Figure S2. IR spectra of (*R*)-**2** before (top) and after crystallization from toluene/*n*-hexane (bottom).

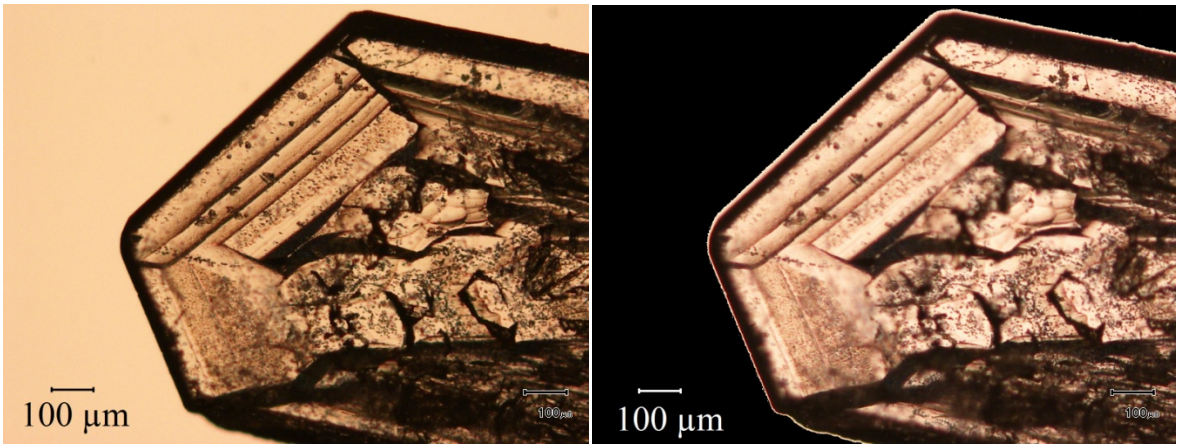


Figure S3 Optical microscope images of compound (*R*)-**2** crystallized from CH_2Cl_2/cyclohexane and purified.

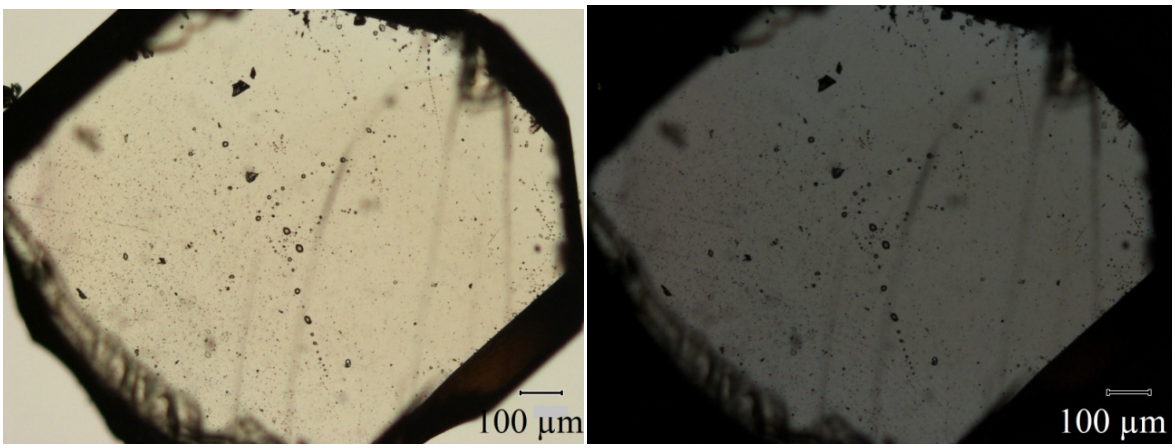


Figure S4 Optical microscope images of compound (*R*)-**2** crystallized from toluene/n-hexane and purified.

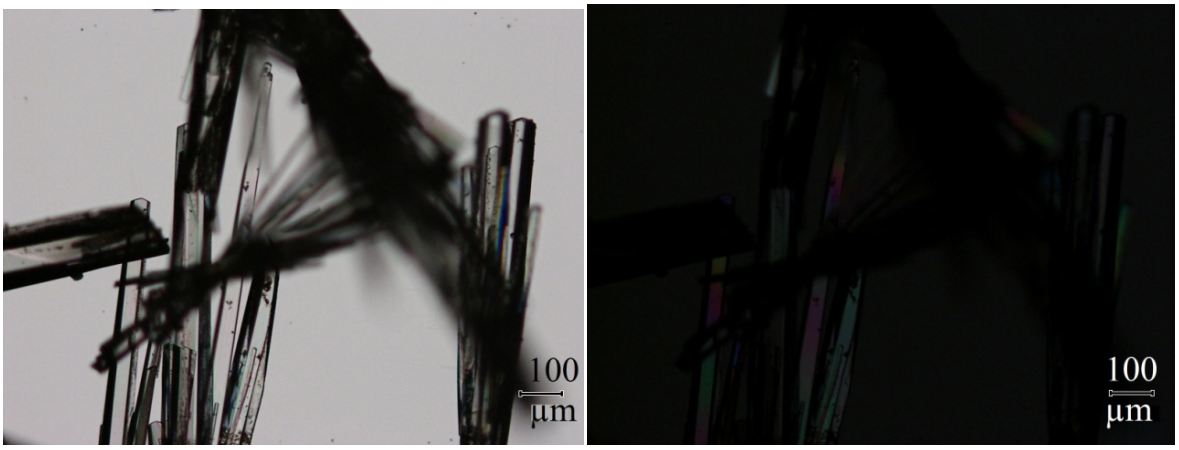


Figure S5 Optical microscope images of compound (*RS*)-**2** crystallized from toluene/cyclohexane and purified.

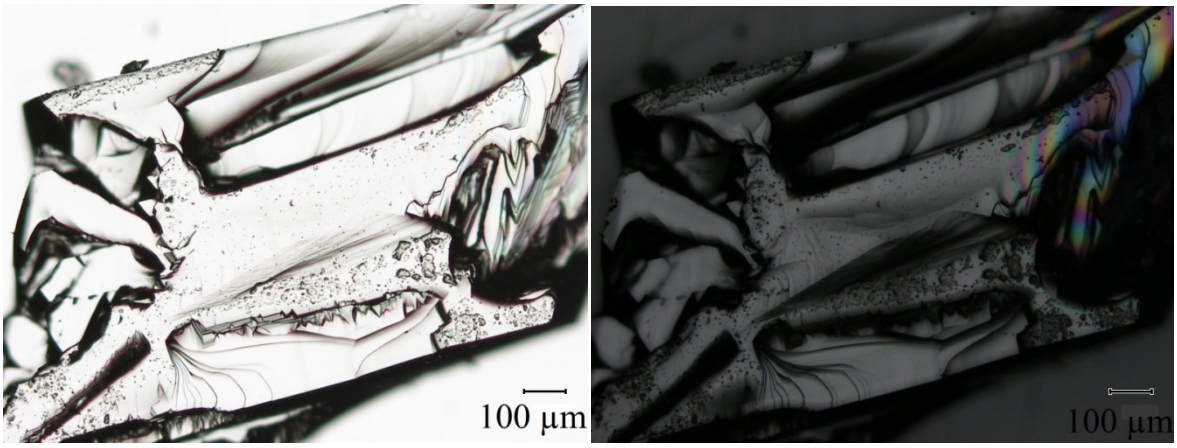


Figure S6 Optical microscope images of compound (*RS*)-**3** crystallized from $CHCl_3$/EtOH and still with regioisomerically impurirties.

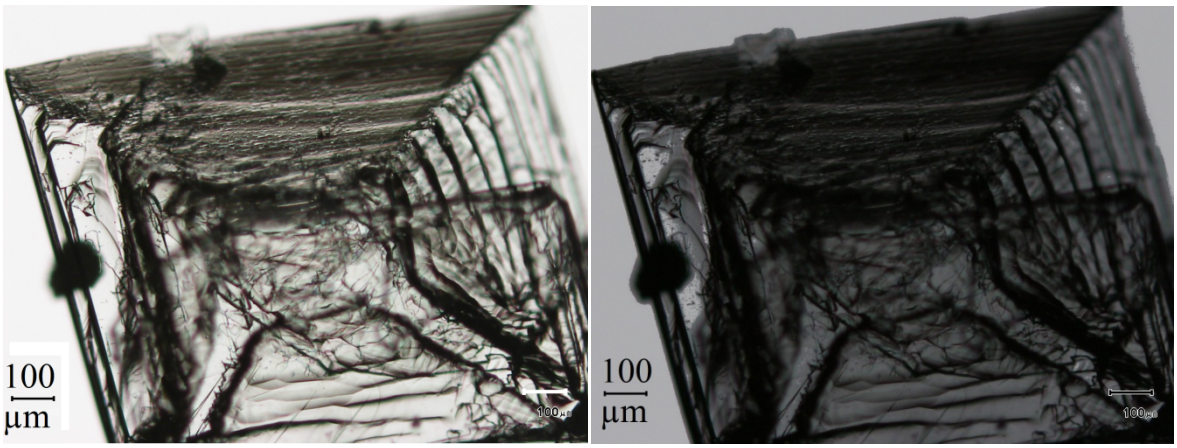


Figure S7: Optical microscope images of compound (*R*)-**3** crystallized from $CHCl_3$/EtOH and purified.

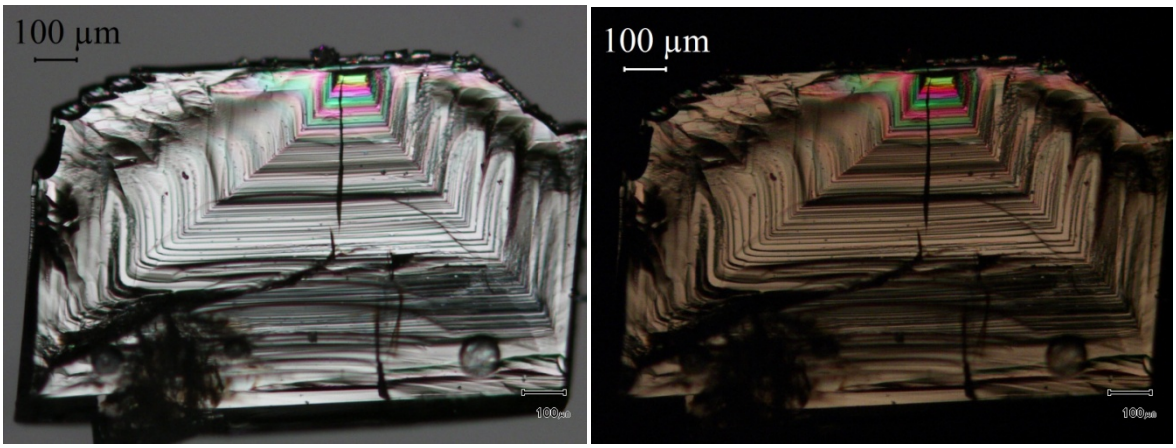


Figure S8 Optical microscope images of compound (*RS*)-**4** crystallized from CH_2Cl_2/EtOH and regioisomerically impure.

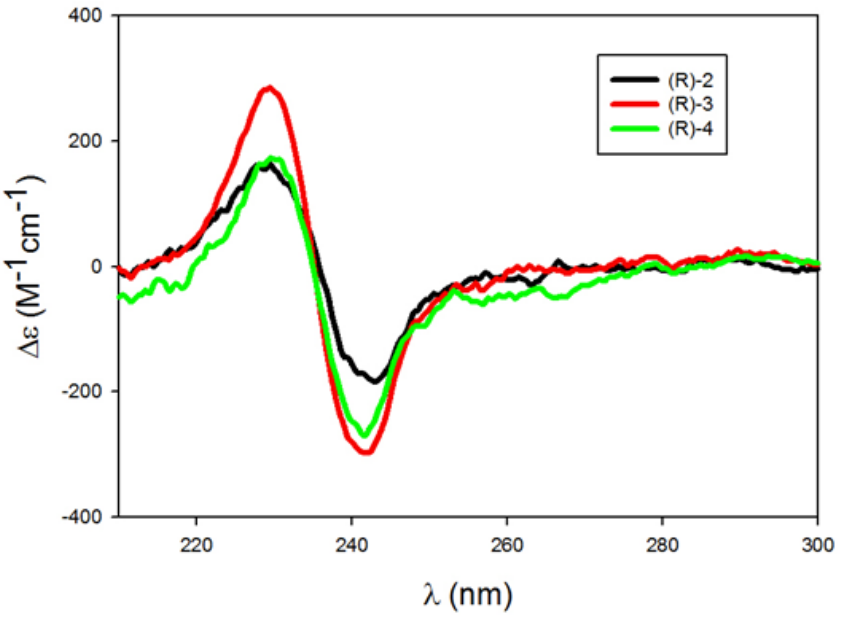
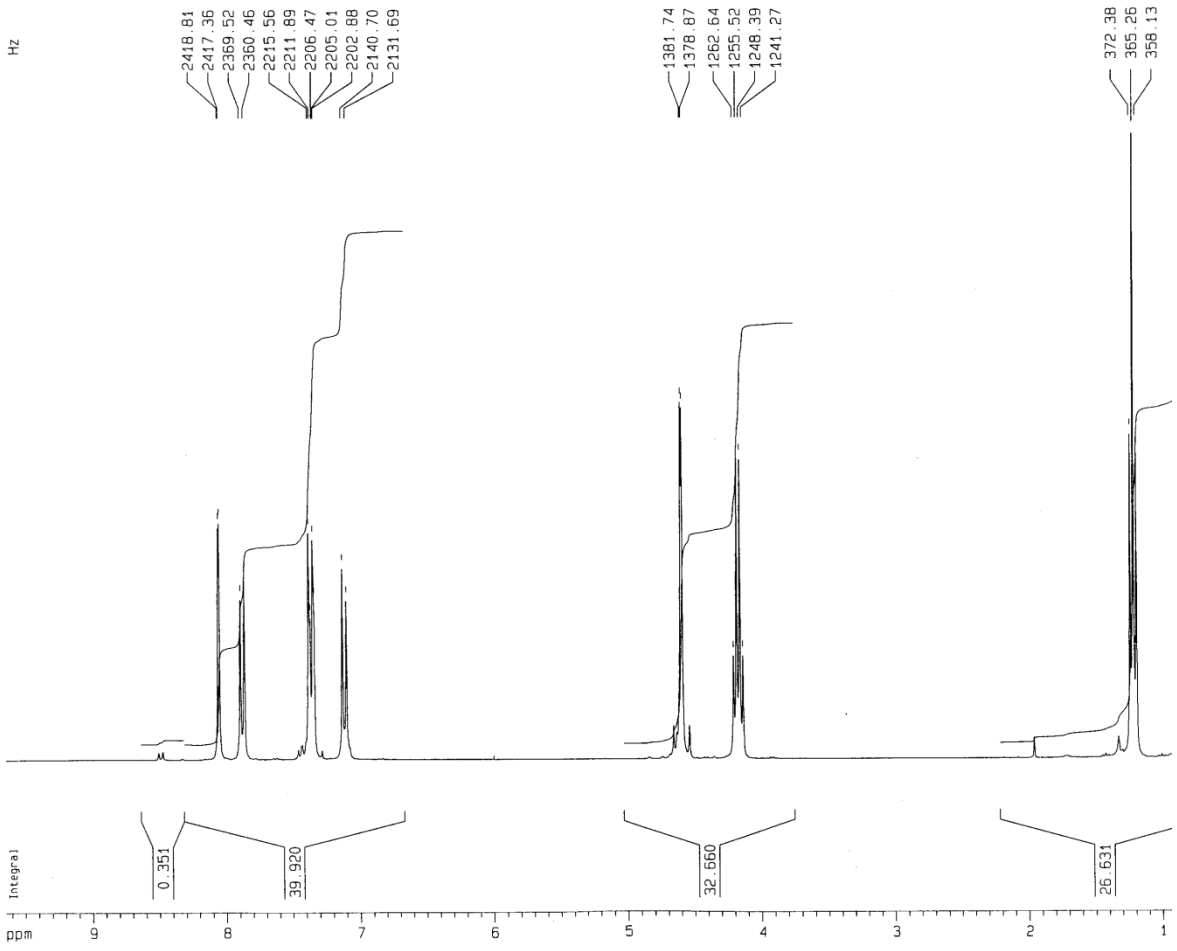


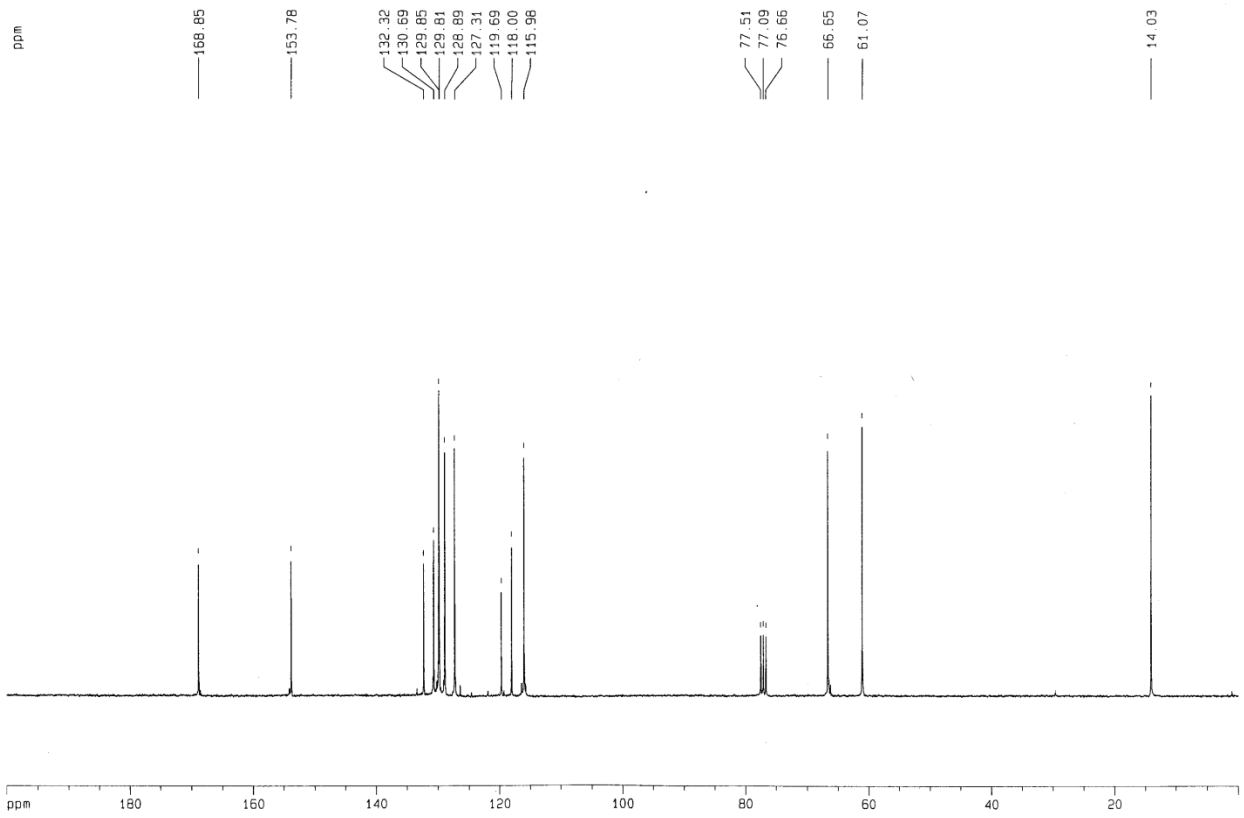
Figure S9 Solution state circular dichroism spectra of the *R* enantiomers of compounds **2** (in EtOH), **3** and **4** (both in MeCN).

Copies of NMR spectra of compound (RS)-**4**

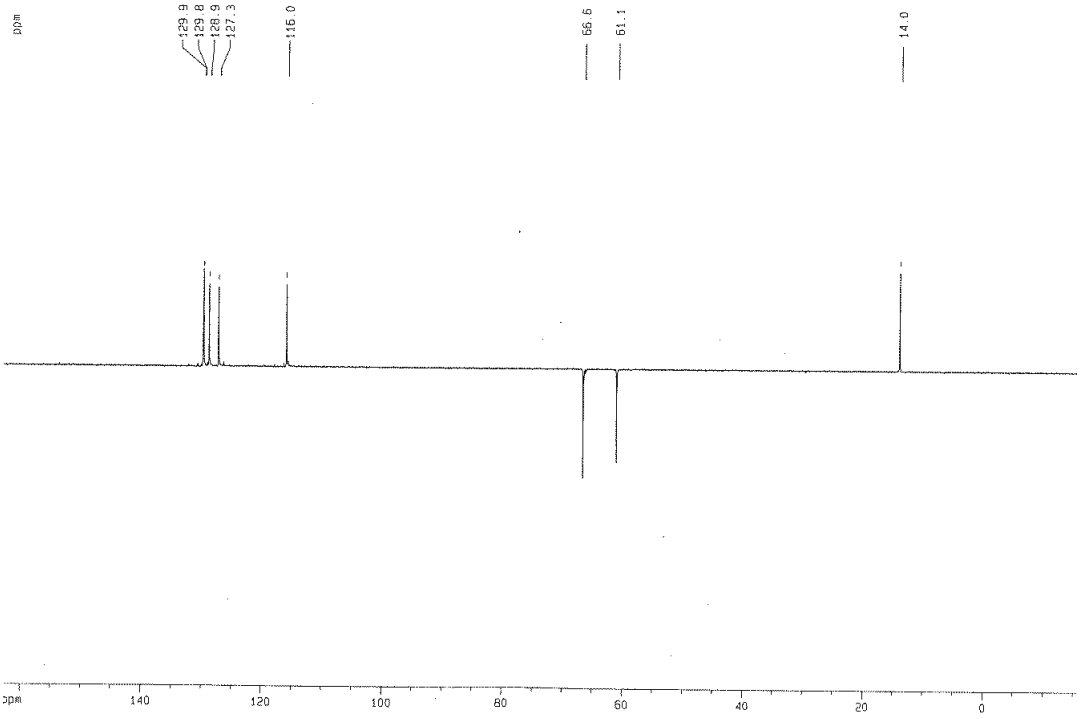
^{1}H NMR



^{13}C NMR



^{13}C NMR (DEPT)



Hydrogen bonds for (*R*)-2 and (*RS*)-2

Table S1. Hydrogen bonds for (*R*)-**2** [Å and °] in $P2_12_12_1$.

D-H...A	d(D-H)	d(H...A)	d(D...A)	<(DHA)
O(1)-H(1O)...O(2)#1	0.831(19)	2.13(2)	2.934(4)	164(5)
O(2)-H(2O)...Br(1)#2	0.823(19)	2.74(4)	3.353(3)	133(4)

Symmetry transformations used to generate equivalent atoms:
#1 -x+2,y+1/2,-z+1/2 #2 x+1/2,-y+3/2,-z

Table S2. Hydrogen bonds for (*RS*)-**2** [Å and °] in $P2_1/n$.

D-H...A	d(D-H)	d(H...A)	d(D...A)	<(DHA)
O(1)-H(1O)...O(2)#1	0.820(19)	2.14(3)	2.840(3)	143(4)

Symmetry transformations used to generate equivalent atoms:
#1 -x-1/2,y+1/2,-z+1/2