

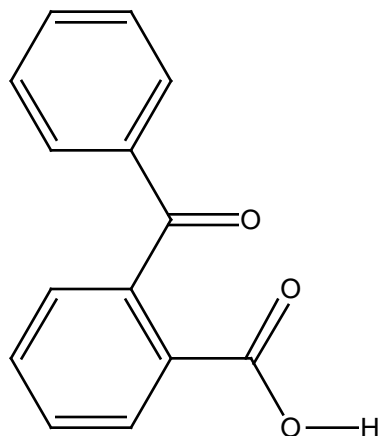
Chemistry 416, Dr. Glaser

Solvent Effects on UV/Vis Spectra: Chiral Perturbation in H-Bonded Systems.

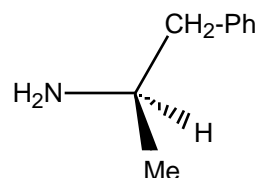
Structurally symmetric achiral compounds may show optical activity in the presence of chiral solvent molecules owing to the asymmetry introduced by the chiral solvent. Why?

Another type of such “induced optical activity” occurs when chiral auxiliaries are present (in the achiral solvent) that may interact with the chromophore of the achiral solute. When 2-benzoylbenzoic acid and chiral (*R*)-(-)-amphetamine are dissolved in equimolar amounts in nonpolar solvents, a strong CD was induced in the $n \rightarrow \pi^*$ absorption. Explain.

2-benzoylbenzoic acid



(*R*)-(-)-amphetamine



Positive CD; molar ellipticity at 320 nm

+1320 in CCl ₄
+229 in CH ₃ CN
about 0 in MeOH