

Enantiomer Ratios

Enantiomers are pairs of the same molecule that are mirror images of each other. Life on Earth often displays a preference toward specific enantiomers to build functional polymers, which can result in high levels of enantiomeric excesses in a sample. Therefore, relative enantiomer abundances might serve as signatures of biological activity. Abiotic organic synthesis tends to form equal mixtures of enantiomers in the absence of an asymmetric chiral influence (i.e., a physical or chemical process that favors a specific enantiomer), although abiotic organic mixtures, such as those found in carbonaceous chondrites, sometimes display enantiomeric imbalances, which point to non-biotic mechanisms of enantioselectivity.