

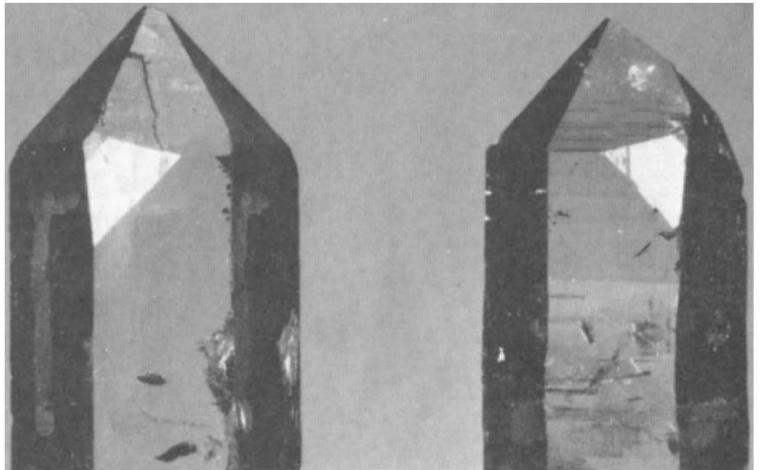
*Mirrors are everywhere*



# Chirality at the macroscopic level in quartz crystals



## L- and D-Quartz



*Chirality only arises at the macroscopic scale here*

H. D. Flack, *Acta Cryst* **2009**, 371

# Pasteur's genius experiment from 1847!



## Sodium Ammonium Tartrate



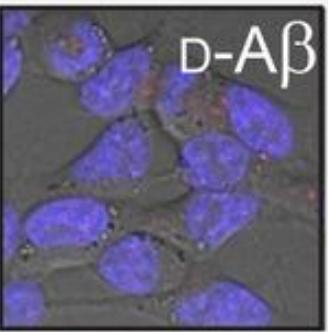
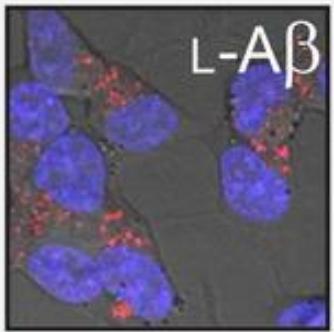
H. D. Flack, *Acta Cryst* 2009, 371

*Chiral resolution of the molecules on crystallization. Molecular chirality is reflected by the shape of crystals.*

# Our favorite application of mirror-image peptides



Cell uptake of amyloid  $\beta$   
depends on chirality



Dutta, Finn, Kuhn, Abrams, Raskatov,  
*ChemBioChem* **2019**, 20, 1023

*Natural Amyloid Beta is taken up by cells more efficiently than its mirror-image analog. The L-stereoisomer is also much more toxic than its D-counterpart.*



R21AG058074  
R01AG074954

*APS Early Career  
Lectureship 2019*