CHIRAL RECOGNITION IN MOLECULAR CLUSTERS

N. BORHO, *Department of Chemistry, University of Alberta, Edmonton, Canada T6G 2G2*; M. A. SUHM, *Institut für Physikalische Chemie, Universität Göttingen, D-37077 Göttingen, Germany*.

Chiral Recognition was investigated via direct FTIR-spectroscopy in a supersonic expansion. Ragout-jet[a] and also Filet-jet[b] FTIR-spectroscopy are well-suited to distinguish between enantiopure and racemic molecule/rare gas expansions.
The α-hydroxyester methyl lactate shows an outstanding chiral recognition effect associated with specific self-aggregation [c]. The infrared ν_{OH} spectra will be analysed with the help of pressure dependence studies, argon coating and difference techniques. Additionally, a systematic study of analogues such as ethyl-, isopropyl- and *tert*-butyl lactate ester, methyl glycolate, methyl α-hydroxyisobutyrate, α-hydroxyketones and mixed methyl lactate-methanol clusters will be presented. This study allows us to draw conclusions about the role of different functional groups involved in the intermolecular interactions of methyl lactate clusters. Preliminary quantum mechanical calculations reveal possible structures of methyl lactate aggregates.

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[b] C. A. Rice, N. Borho and M. A. Suhm, Z. Phys. Chem, 219, 1, (2005).
[c] N. Borho and M. A. Suhm, Org. Biomol. Chem. 1, 4351 (2003).