

THE MICROWAVE SPECTRUM OF LACTALDEHYDE, THE SIMPLEST CHIRAL SUGAR.

ELENA R. ALONSO, LUCIE KOLESNIKOVÁ, CARLOS CABEZAS, SANTIAGO MATA, *Grupo de Espectroscopia Molecular, Lab. de Espectroscopia y Bioespectroscopia, Unidad Asociada CSIC, Universidad de Valladolid, Valladolid, Spain*; J.-C. GUILLEMIN, *UMR 6226 CNRS - ENSCR, Institut des Sciences Chimiques de Rennes, Rennes, France*; JOSÉ L. ALONSO, *Grupo de Espectroscopia Molecular, Lab. de Espectroscopia y Bioespectroscopia, Unidad Asociada CSIC, Universidad de Valladolid, Valladolid, Spain*.

Among the sugar compounds whose conformations have been determined by different spectroscopic techniques the structure of the lactaldehyde ($\text{CH}_3\text{CH}(\text{OH})\text{CHO}$), the simplest chiral sugar, is conspicuously absent. It is of great interest in the field of astrophysics, where the ongoing search in the interstellar medium (ISM) has been able to detect, based on the rotational spectra identification, the simplest C_2 sugar glycoaldehyde ^{a, b} Lactaldehyde is a solid with high melting point and low vapor pressure, preventing easy measurements of its gas-phase spectra. Herein, crystalline DL-lactaldehyde samples have been vaporized by laser ablation (LA) and the monomer and the non-centrosymmetric hemiacetal dimer have been revealed in a supersonic expansion by broadband Fourier transform microwave (CP-FTMW) spectroscopy. This rotational study enables the search of the lactaldehyde in the ISM.

^aHollis JM; Lovas FJ; Jewell. *Astrophys J.* (2000), 540(2):L107–L110

^bHollis JM; Jewell PR; Lovas FJ; Remijan A. *Astrophys J.* (2004), 613(1):L45–L48.