

JET COOLED ROTATIONAL SPECTRA OF LASER ABLATED URACIL AND THYMINE

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The rotational spectra of the nitrogen bases uracil^a (m.p. 335 °C) and thymine^b (m.p. 316 °C) have been observed in the 6-18 GHz frequency range by using a Laser-Ablation Molecular Beam Fourier Transform Microwave Spectrometer (LA-MB-FTMW).^c The nuclear quadrupole coupling hyperfine structure corresponding to the presence of two ¹⁴N atoms has been completely resolved for both molecular systems. The rotational spectrum of all uracil ¹³C and ¹⁵N monosubstituted isotopomers in their natural abundance are being observed. Following the characterization of these isotopomers, the uracil structure in gas phase will be obtained.

^a R. D. Brown, P. D. Godfrey, D. McNaughton and A. Pierlot, *J. Am. Chem. Soc.*, **110**, 2329 (1988)

^b R. D. Brown, P. D. Godfrey, D. McNaughton and A. Pierlot, *J. Chem. Soc. Chem. Commun.*, 37, (1989)

^c A. Lesarri, S. Mata, J. C. López and J. L. Alonso, *Rev. Sci. Instrum.*, **74**, 4799 (2003).