SEVEN CONFORMERS OF PIPECOLIC ACID IDENTIFIED IN THE GAS PHASE

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The multiconformational landscape of the non-proteinogenic cyclic amino acid pipecolic acid has been explored in the gas phase. Solid pipecolic acid (m.p. 280°C) was vaporized by laser ablation (LA) and expanded in a supersonic jet where the rotational spectra of seven conformers were obtained by broadband microwave spectroscopy (CP-FTMW). All conformers were conclusively identified by comparison of the experimental spectroscopic constants with those predicted theoretically. The relative stability of the conformers rests on a delicate balance of the different intramolecular hydrogen bonds established between the carboxylic and the amino groups.