MW SPECTROSCOPY OF ALPHA-ALANINE AND A SEARCH IN ORI-KL

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The study of amino acids in interstellar space is of great interest in connection with the origin of life. α-Alanine is the simplest amino acid that have a chiral carbon atom. Thus, the detection of α-alanine in interstellar space is essential to discuss the origin of the homochirality of natural amino acids in proteins. In order to search for α-alanine in interstellar space, we have observed rotational spectrum of α-alanine in the 83-99 GHz and 167-177 GHz regions by using a continuous molecular beam equipment. By combining previous data by Godfrey et al.[a] and Blanco et al.[b], we obtained precise molecular constants that predict transitions in the 100 GHz region with an uncertainty of only 50 kHz. Based on the laboratory spectroscopy, we have searched for α-Alanine in Orion-KL by using the 45 m Nobeyama Radio Telescope. The results will be discussed.

[a] P. D. Godfrey, S. Firth, L. D. Hatherley, R. D. Brown, and A. P. Pierlot, *J. Am. Chem. Soc.* **115**, 9687, (1993).
[b] S. Blanco, A. Lesarri, J. C. Lopez, and J. L. Alonso, *J. Am. Chem. Soc.* **126**, 11675 (2004).