SEARCHES FOR β-ALANINE AND PYRIMIDINE TOWARD ORION-KL

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Watanabe et al.[a] have searched for α-alanine in Ori-KL with the Nobeyama 45-m radio telescope. Blagojevic et al.[b] expected that β-alanine may have a larger abundance than α-alanine in interstellar space. In meteorites the abundance ratio of glycine, β-alanine, α-alanine is reported to be 1 : 2.35 : 0.26. Pyrimidine may be related to the nucleic acid base such as uracil and searched by Kuan et al.[c] In the present study, we carried out deep searches for β-alanine and pyrimidine toward Ori-KL by using a new waveguide-type sideband-separating receiver in the 3 mm band installed at Nobeyama 45-m telescope. Low noise characteristic of the receiver made it possible to high sensitive observation in wide freqency range. The rotational transitions of β-alanine and pyrimidine were not detected with upper limit abundances of $2.9\times10^{14}\mathrm{cm}^{-2}$, $8.8\times10^{12}\mathrm{cm}^{-2}$, respectivity. The upper limit for pyrimidine is an order of magnitude lower than the previous[c]. Many un-identified lines have been detected and the carriers will be discussed.

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[a] S. Watanebe, S. Kubota, K. Kawaguchi, Y. Kasai, and T. Momose, 61st Ohio State University International Symposium on Molecular Spectroscopy, WH11 (2006).

[b] V. B. Blagojevic, S. Petrie, and D. K. Bohme, *Mon. Not. R. Astron. Soc.* **339**, L7 (2003).

[c] Y. J. Kuan, C. H. Yan, S. B. Charnley, Z. Kisiel, P. Ehrenfreund, and H. C. Huang, *Mon. Not. R. Astron. Soc.* **345**, 650 (2003).