

## DETECTION OF DIHYDROXYACETONE IN SGR B2(N-LMH): THE FIRST 3C INTERSTELLAR SUGAR?

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The detection of glycolaldehyde ( $\text{CHOCH}_2\text{OH}$ ), the simplest sugar, in Sagittarius B2(N-LMH)<sup>a</sup>, as well as the detection of a suite of sugars and other polyols in carbonaceous chondrites<sup>b</sup> has led to further experimental and observational investigation of sugar related species in hot cores. Dihydroxyacetone ( $\text{CHO}(\text{CH}_2\text{OH})_2$ ; DHA), the second most complex sugar and the simplest 3C sugar, was one of the species detected in this study. While no definitive abundance predictions can be made for DHA due to its absence in existing hot core models, it is reasonable to assume that it may exist in column densities comparable to those found for acetone or glycolaldehyde in Sgr B2(N-LMH). The millimeter and submillimeter spectra of DHA have been obtained in our laboratory and the spectrum assigned up to 450 GHz<sup>c</sup>. This spectrum has been used to guide initial observational searches for DHA in Sgr B2(N-LMH) with the Caltech Submillimeter Observatory (CSO). To date, eight potential DHA lines have been observed. The line center velocities, rotational temperature, and column density derived from these data are in excellent agreement with the values obtained for acetone and glycolaldehyde. Additional observing time has been granted at the Owen's Valley Millimeter Array (OVRO) and the Green Bank Telescope (GBT), and these upcoming observations should further confirm this detection.

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<sup>a</sup>Hollis, J.M., Lovas F.J., and Jewell P.R. (2000) *ApJ* **540**, L107-L110.

<sup>b</sup>Cooper, G., Kimmich, N., Beliste, W., Sarinana, J., Brabham, K., and Garrel, L. (2001) *Nature* **414**, 879 - 883.

<sup>c</sup>Widicus, S.L., Braakman, R., Kent, D.R. and Blake, G.A. (2004) *J. Mol. Spec.*, in press.