OBSERVATIONS OF FORMIC ACID TOWARD GALACTIC HOT MOLECULAR CORES

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Formic acid shares structural elements with the common interstellar molecule methyl formate ($HCOOCH_3$) and the elusive biomolecule acetic acid (CH_3COOH). It is the simplest organic acid, but it has only been identified in astronomical sources by fairly weak lines in single-element telescope surveys. In order to study the successive formation of biomolecules in the ISM, we carried out a survey of HCOOH toward galactic hot molecular cores with the Berkeley-Illinois-Maryland Association (BIMA) Array. Up to five transitions with rest frequencies near 87 GHz have been detected simultaneously in three sources: Sgr B2(N), Orion, and W51. HCOOH was found to have an excitation temperature of at least 100 K. The formation of HCOOH is probably related to grain-surface chemistry in hot cores. Abundance comparisons with other molecules such as $HCOOCH_3$ and ethyl cyanide (C_2H_5CN) will be discussed.

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