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Impact Chemical Evolution Processes for Biomolecules Formed by Oceanic Impact TOSHIMORI SEKINE, NAO FUKUNAGA, SHUNSUKE IZUMI, Hiroshima University, YOSHIHIRO FURUKAWA, TAKESHI KAKEGAWA, Tohoku University, TAKAMICHI KOBAYASHI, HIROMOTO NAKAZAWA, National Institute for Materials Science — The biomolecules on Earth are thought either to have come from the extraterrestrial parts carried with flying meteorites or to have been formed on Earth from the inorganic carbon through given energy. From the standpoint to address impact energy, we need to know possible process how the simple biomolecules formed at a violent impact have been evolved subsequently through several impacts at the time of the late heavy bombardment. In this study we investigated the simplest amino acid, glycine marked by 13C, in order to understand how it will be evolved chemically when it is subjected to further impacts. The results indicate that some new molecules are formed and others are decomposed, and suggest not only that the impact-induced process is not so simple to proceed just to one way, but also that there are complicated and multi-process ways. It also must be taken into account the heterogeneous distribution of impact energy in an impact that may cause a significant effect on the chemical evolution. We will show experimental results of shock recovery on mineral powders mixed with solutions and air within a metal container.

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