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## MY WORK



Fig 1. Meteorite sample from NIPR.

The relative abundances of heavy stable isotopes (D,  $^{13}\text{C}$  and  $^{15}\text{N}$ ) are indicative to the origins of compounds present in meteorites. Organic compounds in meteorites are enriched in heavy stable isotopes relative to the light counterparts. This has provided an alternative mean for determining the synthetic origin of amino acids in meteorites.

Amino acid nitrogen isotope analysis requires precise measurements of  $^{15}\text{N}/^{14}\text{N}$  ratios. However, GC columns that contain nitrogen compounds in their stationary phase may contribute additional nitrogen through column bleeding. A way to obviate such problem is to derivatize amino acids with optically active reagents to yield diastereomeric derivatives (N-pivaloyl-2-butyl esters) and analyse with an achiral GC column.

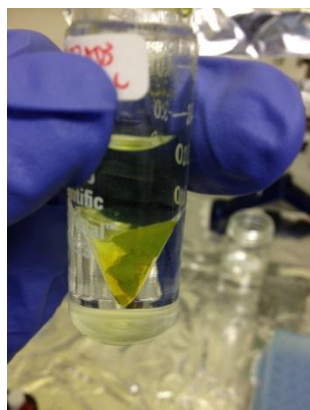


Fig 2. Extracting amino acids from meteorite samples.

At JAMSTEC, a modified amino acid extraction and preparation protocol was established. Results including comparison between the efficiency of direct (liquid-) and indirect (vapor-phase) hydrolysis of amino acid standards and soil sample, determination of the fragmentation patterns of NP/2Bu esters of common terrestrial and extraterrestrial amino acids and their retention time on non-chiral GC column. After the protocol has been tested and evaluated, meteorite samples (CO3 ALH77003, and CI1 Y980115, see Fig 1), which were obtained from the National Institute of Polar Research (NIPR) collection, were analysed under the new protocol. Amino acid contents, enantiomeric ratios, and nitrogen isotopic ratios were obtained for these meteorites.

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## LITTLE TIPS

**LANGUAGE.** Despite my 10 years of self-taught Japanese, I could not even communicate with Japanese kids using my crappy Japanese. Nevertheless, perception largely worked out fine. If you really wish to learn the language before going Japan, I recommend starting with katakana (one of the three Japanese writing systems). Japanese use many foreign words in

their language that are written in katakana. Therefore, it will be convenient if you can read katakana. Sometimes you may even try converting English into katakana characters and voila, you can speak some Japanese. In any case, Japanese are remarkably nice and they will endeavour to help you. Just speak slower for them.



Fig 3. My research group members and I.

**WORK.** Despite the collaboration between your home and host laboratories, each laboratory has its own protocol, and you would expect to see variations from what you are familiar with. I suggest fellows to volunteer a small presentation to your host research group at the beginning of your stay. Such presentation needs not to be formal. I am sure you will benefit from the discussion session that follows.



Fig 4. My house in Japan.

**MEETING PEOPLE.** My host institute had arranged for me a local Japanese style house where I shared the place with 4 other Japanese and a JSPS fellow. If you wish to mingle with the locals, this would be a better option rather than staying in university dorm (although it might be cheaper to stay in university property). Another half of your time will be spent with your lab mates/ fellow group members. Summer in Japan is a season of fireworks and yukata, traditional festivals (matsuri), barbeque, etc. Make sure you enjoy these events with them.

#### MORE PHOTO SHARING:

