

Elemental and stable isotope compositions of the brownish colored benthic foraminifera in IMAGES Core MD01-2412

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Deep sea core MD 01-2412 was collected from N 44.5 degree, E 145 degree and water depth 1225 m, off Hokkaido in the southwestern Okhotsk Sea. We measured stable isotope compositions of benthic foraminiferal fossils through this core. Carbon isotopes of foraminifera indicate about -1 per mil (VPDB) through this core. Five carbon isotope anomaly events were found during 120,000 years. It seems these events occurred every 20,000 years. The most depleted value was ca. -4.5 per mil (VPDB). Brownish colored specimens were observed in these layers.

The microstructures of foraminiferal specimens were observed by scanning electron microscope (SEM). The brownish specimens have some authigenic crystals on both inner and outer surface of test wall. Such an authigenic material is absent on normal colored specimens.

We analysed elemental composition of the foraminiferal specimens by SEM-energy dispersive spectrometer (EDS). Calcium, carbon and oxygen were detected in both brownish and normal specimen. Silicon, aluminium and magnesium were obviously detected in brownish specimen.

We try to measure the isotope composition of the authigenic layer. The outer surface layers were chipped for several specimens. These chipped specimens were analysed by IsoPrime. The measurement results indicate that carbon isotope compositions of chipped specimens were heavier than compositions of no treated brownish specimens. Therefore, carbon isotope ratios of chipped part should be depleted value.