

A preliminary report of radiocarbon dating of fatty acids and pheopigments from the Japan Sea sediments

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Compound-specific radiocarbon (¹⁴C) dating has been attracted attention for the last two decades, because the method is potentially useful for constructing chronologies of sediments that are sparsely datable materials such as carbonates. For example, sedimentary short-chain (C₁₄, C₁₆, and C₁₈) saturated and unsaturated fatty acids (FAs) and pheopigments (i.e., chlorophyll derivatives) provide a reliable chronology of the sediment with eliminating significant older age biases from relict organic carbon in the Southern Ocean [1, 2, 3]. In this study, we obtained sediments from eastern Japan Sea in which few foraminiferal shells are found in the Holocene section. Thus we apply this method to conduct high-resolution paleoceanographic studies in this area.

We are currently measuring ¹⁴C dates of short-chain FAs and pheopigments purified from the sediments. So far, several pre-Holocene sections are selected to evaluate the applicability of the method by comparing them with concurrent foraminiferal dates. We will report our preliminary results and discuss perspectives.

[1] Ohkouchi *et al.* (2003) *Radiocarbon* **45**, 17-24. [2] Ohkouchi & Eglinton (2008) *Quaternary Geochronology* **3**, 235-243. [3] Yamane *et al.* (2014) *Radiocarbon* **56**, 1009-1017.