

## Radiocarbon age variability of individual lipid biomarkers from surface sediments in the western North Pacific

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Radiocarbon analysis of individual lipid biomarkers as well as bulk organic matter and foraminifera was conducted on surface sediment from the western North Pacific. The three sediment core samples were recovered from southern Okhotsk Sea and the western North Pacific. The radiocarbon ages of fatty acids, hydrocarbon, sterols and alkenones extracted from the same horizon of sediment core showed a large variability. Those were attributed from assuredly different origins from both autochthonous (marine) and allochthonous (terrestrial) products. However, in some compounds there was unconsistence of radiocarbon ages despite the same marine sources. This study will aim to realize organic compound-based chronology for marine sediment, particularly in the western North Pacific, where is difficult to obtain sufficient amount of planktonic foraminifera for AMS analysis due to dissolution of calcium carbonate in relation to CCD. The molecular level radiocarbon dating approach had analytical problems in relation to difficulties of recovering target compounds with higher purities and realistic amount from sediment samples, and extremely small amount AMS radiocarbon analysis. To date we have achieved successfully these problems with technical modifications of a preparative capillary gas chromatography (PCGC) system and microscale graphitization of compounds for AMS analysis. Our results of individual lipid biomarkers radiocarbon using the marine sediments will provide the possibility as an chronology tool for estimating the real age of sedimentary sequences using organic matter for paleoceanographic study.