瀬戸内海の近過去堆積物における長鎖アルキルジオール組成を用いた古環境復元の可能性
Distributions of long chain diols in modern sediments from the Seto Inland Sea: Implications for paleoenvironments

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Long chain diols are widely distributed in both marine and freshwater environments. Previous studies have been proposed the use of long chain diols as paleoenvironmental indicators. Various ratios of C_{28}-C_{32} 1,13-, 1,14- and 1,15-alkyl diols have been proposed as markers for freshwater influence or upwelling (Diol index; Versteegh et al. 1997; Rampen et al., 2008; 2014), as well as a proxy for the past sea surface temperature (Long chain diol index; Rampen et al., 2012). Several distinct organisms have been suggested as biological sources for long chain diols; i.e. marine and freshwater Eustigmatophyte algae (1,13- and 1,15-alkyl diols) and the marine diatom genus *Proboscia* (C_{28} and C_{30} 1,14-alkyl diols).
In the present study, we investigate the long chain diol compositions in the surface and subsurface sediment cores from the Seto Inland Sea to examine the relations of diol compositions and environmental factors in the coastal region. The cores were taken from Osaka Bay and Harima-nada Bay (eastern part of Seto Inland Sea), in which lengths are 20 cm and 40 cm, respectively. These cores are divided and analyzed in every 5 cm (12 samples).
The long chain diols predominantly consist of C_{30} and C_{32} 1,15-alkyl diols in both Osaka Bay and Harima-nada Bay. Low abundance of C_{28} and C_{30} 1,14-diols implicates the occurrence of the diatom genus *Proboscia* in Seto Inland Sea, however its siliceous tests have not been identified. The rest of long chain diols are probably derived from Eustigmatophyte algae or the other unknown producers. A ratio between C_{30} and C_{32} 1,15-alkyl diol is clearly different between Osaka Bay and Harima-nada Bay, while the general distributions of long chain diols are not significantly varied with depth within each location. The relative abundance of C_{32} 1,15-alkyl diol is higher than most marine sediments reported in previous studies, which possibly attributed to the strong influence by riverine input due to the vicinity to the Yodo River estuary.
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