

## Comparison between assemblages of diatom fossil and biomarkers in surface sediments from Seto Inland Sea

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We investigate the fossil diatom abundances and biomarker concentrations in marine sediment to assess their relationships. 14 sample of surface (uppermost 5 cm of sea bottom) sediments are taken in 5 areas (Aki-nada Bay, Hiuchi-nada Bay, Harimanada-Bay, Osaka Bay and Kii Strait) of Seto Inland Seas in July 2015. Additional 8 samples are taken in Harimanada-Bay in October 2015. Although the precise age of the core has not been determined yet, it could be deposited within 10 years, according to the sedimentation rates by previous study (Yasuhara et al., 2007).

Diatom species such as small *Thalassiosira* spp., *skeletonema costatum*, resting spore of *Chaetoceros* spp. and *Neodelphyneis pelagica*, which were reported by previous study (Hirose et al., 2008), are observed as the dominant taxa in all samples. *Rhizosolenia* spp. and *Pleurosigma* spp., known HBI producers, were occurred in low proportions. As specific diatom biomarkers, we identified C25 di- and tri-unsaturated highly branched isoprenoids (HBIs), along with relatively minor amount of C25 and C35 cyclic HBIs. Total abundances of diatom valves and HBIs were generally correlated, probably reflecting variations of diatom production. Meanwhile, Aki-bay and some samples of Harima-nada Bay were characterized with relatively low abundance of HBIs relative to valves. In these area, focused analysis on the minor diatom taxa would be needed to provide quantitative dataset to discuss further relation of HBIs and produces and their spatial distribution.

Keywords: diatom assemblage, diatom biomarkers, HBIs, surface sediment, Seto Inland Seas