

## Distributional gradient of sister species of vesicomid bivalves in chemosynthetic fauna in Japan

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Vesicomid bivalves is one of the important components of the deep-sea chemosynthetic biological communities due to their high biomass based on the chemosynthetic primary production of their symbionts. The restrictive distribution of vesicomid clams by chemical gradient such as sulfide concentration in sediment has been discussed, but the relationships between general environmental properties such as temperature, salinity and oxygen concentration were unclear. With a development of a specific primer set for mPCR to identify concurrent vesicomids, *C. okutanii* and *C. soyoae*, in chemosynthetic biological communities in Sagami Bay, distributional bias of two vesicomids along the environmental factors was examined. Ratio of *C. okutanii* and *C. soyoae* in *Calyptogena* assemblages in Sagami Bay were correlated with depth, temperature and salinity but were not correlated with DO. However, the environmental information of the habitats of *C. okutanii* in Okinawa Trough hydrothermal vent fields revealed that the depth was not the factor to discriminate the habitat of the two *Calyptogena* clams. The present results showed that the distribution of the *Calyptogena* clams which highly depending on chemosynthetic symbionts was also affected by ordinal oceanographic environmental factors.

Keywords: vesicomid, chemosynthetic fauna, Sagami Bay, Okinawa Trough, mPCR