

## Microbial diversity at the cold-seep environments at the Nankai Trough

# Chiaki Kato[1]; Shizuka Arakawa[2]; Takako Sato[3]

[1] XBR, JAMSTEC; [2] Applied Chemistry, Toyo Univ; [3] XBR., JAMSTEC

<http://www.jamstec.go.jp>

The NaBiSC (Nankai Bio Symbiont Cruise) have performed on June, 2005, at Nakai Trough (Chair: Chiaki Kato, JAMSTEC). Our study areas were at 2nd Tenryu Knoll at 615 m, off Shiono Cape at 2,048 m, and off Muroto Cape at 3,310 m, and the cold-seep sediment samples were obtained from those site by meaning of Shinkai 6500 system. The sediment samples were treated on board and the environmental DNAs were purified. From the molecular analysis, microbial diversity at the seep environments was elucidated and phylogenetic analyses were performed. From the results, we have identified more active cold seep microbial communities (ANME2-SRB consortium) from the shallower depth, 2nd Tenryu Knoll than others (1). Compare with Japan Trench Land Slope, more active cold-seep communities were identified at deeper seep, at a depth of 7,500m than other two sites, at depths between 5,500~6,400m (2). These results could be concluded that the accelate prism structure might be cause of more active cold-seep microbial structure at shallower depth located closely with Land side by Philippin Plate moving, compare with the faster moving Pacific Ocean Plate at Japan Trench. More detailed discussion will be performed.

(1) Arakawa, S., Sato, T., Yoshida, Y., Usami, R. and Kato, C. (2006) Comparison of the microbial diversity in cold-seep sediments from the different water depths in the Nankai Trough. *J. Gen. Appl. Microbiol.*, in press.

(2) Arakawa, S., Mori, M., Li, L., Nogi, Y., Sato, T., Yoshida, Y., Usami, R., and Kato, C. (2005) Cold-seep microbial communities are more abundant at deeper depths in the Japan Trench land slope. *J. Jap. Soc. Extremophiles*, 4, 50-55.