**Bacterial Diversity Change of the Surface Seawater from Dunedin, New Zealand to Australian Antarctic Ridge (AAR)**

Yung Mi Lee1, Sung-Hyun Park1, Doshik Hahm1, and Soon Gyu Hong1

1 Korea Polar Research Institute, Incheon, Korea

**PURPOSE**

To investigate the richness and biogeographical distribution pattern of bacterial communities in the South Pacific Ocean (from Dunedin, NZ to AAR).

**ABSTRACT**

The prokaryotic microbial diversity of surface seawater from the Dunedin, New Zealand to the Australian-Antarctic Ridge (AAR), the largest unexplored expanse of the global mid-ocean ridge system was analyzed by pyrosequencing method. Seawater samples were collected from twenty five stations during the expedition of icebreaker ARAON in the early 2011. The temperature of seawater dropped from 12.9°C to 2.8°C and similarly the salinity decreased from 34.2 to 33.8 as he latitude goes up from 47°S to 62°S. The total 27,966 bacterial pyrosequencing reads were collected in this study and they were clustered into 84 to 166 phyla types by 97% similarity cutoff. Most of phyla types were affiliated to Bacteroidetes, Alphaproteobacteria, and Gammaproteobacteria. The minor phyla were included Betaproteobacteria, Cyanobacteria, and Verrucomicrobia. The Alphaproteobacteria decreased while Bacteroidetes increased as the latitude is higher. Interestingly the Cyanobacteria was observed in the seawater collected from at the latitude lower than 55°S. The change of composition in the bacterial community may be correlated with the change in environmental factors.

**METHODS**

**RESULTS**

These results suggested that the change of composition in the bacterial community may be correlated with the change in environmental factors.

**CONCLUSION**

These results suggested that the change of composition in the bacterial community may be correlated with the change in environmental factors.