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# GLACIAL HISTORY AND PALEOCEANOGRAPHIC CHANGES OF THE WESTERN ARCTIC OCEAN (MENDELEEV RIDGE) USING BERYLLIUM ISOTOPES

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Beryllium isotopes have been used as a proxy to understand paleoclimate signals which correspond well with oxygen isotope stages. Previous publications related with this aspect are well established in the science community related to paleoclimate change for both marine and lake environments [1]. In general, for warmer period, both the concentrations of beryllium isotopes were relatively higher than during colder period. Our recent investigation for the East Sea, Korea also shows this trend clearly although the characteristics of marine environmental setting and sediment accumulation are still revealed through the pattern of these isotopes as a proxy representing the regional climatic environment [2]. A new investigation of paleoclimate and environmental changes using beryllium isotopes for the Mendeleev Ridge of the western Arctic Ocean was accomplished using the 39 cm-long box core sediment (PS72/396-3 GKG) which was recovered during the Polarstern ARK23/3 Expedition in 2008. The age of core PS72/396-3 seems to be back to MIS 5.1 based on lithostratigarphy (well known brown-gray colour and pink layers), AMS 14C ages and oxygen and carbon isotopes of planktonic foraminifer N. pachyderma sin.

Our 10Be-stratigraphy shows that there are three cold periods during the MIS 5. Interestingly, 9Be data show that constant input of 9Be to the Mendeleev Ridge is clearly observed. This could be associated in a special environmental feature changes during the time period which is corresponding to the constant 9Be concentration. During this time period, TOC (%) values also show a similar pattern. Furthermore, 4 more box core sediments from the western Arctic Ocean area will be investigated in the near future. Our presentation introduces the plaeoclimate and environmental change of the western Arctic Ocean and compared with other published data elsewhere. This study may be a useful approach for understanding Arctic climate change for the Mendeleev Ridge as well as global paleoclimate changes during the late Quaternary glacial-interglacial cycles.

[References]

[1] Aldahan, H. S. et al. (1997) Mar. Geol., 144, 147-167.
[2] Kim, K. J. and Nam, S.-I. (2010) Nucl. Instr. Meth. B268, 1248-1252.