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DISTRIBUTION OF MYCOSPORINE-LIKE AMINOACIDS ALONG SIZE-FRACTIONATED PHYTOPLANKTON IN THE BUEAFORT SEA, ARCTIC

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The concentration of UV-absorbing compounds (Mycosporine-like amino acids, MAAs), was investigated by comparing the size-fractionated phytoplankton in the Bueafort Sea during Curize RV-ARAON. Chlorophyll a concentration indicated that the dominated phytoplankton was larger than 20 μm phytoplankton in this study area. The concentration of total MAAs displayed that larger phytoplankton ($>20 \mu\text{m}$) occupied the content of total MAAs concentration. A station which located Mackenzie trough had the highest concentration and the production rate of MAA then other stations. The production rate of individual MAA had the highest value of $0.21 (\pm 0.02) \text{ ngC L}^{-1}\text{d}^{-1}$ and $0.14 (\pm 0.001) \text{ ngC L}^{-1}\text{d}^{-1}$ for shinorine and palythine relatively. The concentration of the MAA also showed higher values in the quartz incubation bottles than in the PC bottles by comparing the light quality. Though the production rate of shinorine had shown high value in the quartz bottle, the production rate of palythine was similar to that of the quartz and PC incubation bottles. It is possible to understand the changes for newly photosynthesized MAAs in the natural phytoplankton community. The strategy of the phytoplankton for adapting to the different environments and surviving could be verified.