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Diversity and phylogeny of the polar brown algae

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The brown algae through size and abundance are dominant group of benthic marine algae in the sublittoral coastal water of the polar. About 60 and 30 brown algae have been reported around Dasan Station in Svalbard (Spitsbergen), the Arctic and King Sejong Station in King George Island, the Antarctic (Hansen and Jenneborg, 1996; Wiencke and Clayton, 2002; Kim *et al.*, 2003), but there still exists the need for a taxonomic study based on morphological and molecular data. The main aim in this study has been to survey on diversity and phylogeny of brown algae around Dasan Station and King Sejong Station. Diversity and biogeography of representative brown algae, the Desmarestiales and the Laminariales in the Arctic, the Antarctic and their neighbour regions including North Atlantic, Southern Chile, Tasmania and South Africa were investigated. We recognized eight desmarestialean and 15 laminarialean entities based on their morphological characteristics. We have determined *cox1* sequences from those samples for diversity. Also a multi-maker phylogeny of the polar brown algae, around 20 species, was built from two mitochondrial (*cox1* and *cox3*) and two plastid genes (*rbcL* and *psaA*) with published 72 phaeophyceean taxa from NCBI. The diversity, phylogenetic relationships and biogeography of the Arctic and Antarctic members of brown algae will be discussed.