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Isolation and identification of psychrophilic bacteria in the vicinity of the Korean King Sejong Antarctic Station

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Marine psychrophilic bacteria that inhabit seawater at below 4℃, play essential roles in marine ecosystem. To investigate their distribution in the Antarctic region, we have isolated 35 strains of polar bacteria originated from Antarctic sea water, fresh water in the vicinity of the King Sejong Korean Antarctic Station located at King George Island (62°S, 58°W) during November and December, 2005. To examine their growing temperature ranges, we measured average diameter of colonies formed at various temperature ranging from 4℃ to 37℃. Among them, 10 strains have formed large colonies at low temperatures and shown the highest growth rate at 4℃ or 15℃, and formed no colony above 20℃. We have carried out molecular identification using 16S rRNA sequence as a marker. As a result, 8 strains were identified as belonging to genus *Flavobacterium,* 12 strains to genus *Psychrobacter* speceis like *P. arcticus, P. glacincola,* and *P. luti.* Also, nine Antarctic strains showing low sequence similarity (<97%) with known speices are candidates for new species or genus. In this study, we isolated 35 psychrophilic or psychrotolerant bacteria from Antarctic region and they would be useful biological sources for studying cold adaptation of living organisms.