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Summary

We isolated Dunaliella sp. from a high salt lake Funazoko along the coastal region of Lutzow Holm Bay, Antarctica, and have characterized partially its biological properties. The Dunaliella sp. has many interesting characters in ecology and biochemistry as well because it was found to be halotolerant, cryotolerant and light-shield tolerant. Cells of the genus Dunaliella do not possess a rigid cell wall, which are enclosed by a thin elastic plasma membrane and therefore respond rapidly to changes in osmotic pressure by adjusting its cell volume. The alga osmoregulates by varying its intracellular concentration of glycerol in response to the extracellular osmotic pressure.

We herein report the result obtained by the use of $^1\text{H-NMR}$ and $^{13}\text{C-NMR}$ to characterize the intracellular glycerol metabolism in living Dunaliella sp. during adaptations to various stresses.