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***In vitro* Propagation of Arctic Mouse-ear Chickweed (*Cerastium arcticum* Lge.) in High Temperature**

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Objectives

1. Investigation of optimal conditions for *in vitro* propagation of *Cerastium arcticum*.
2. Establishment of effective preservation system of genetic resources collected from the polar region.

Materials and Methods

1. Material - Arctic Mouse-ear Chickweed (*Cerastium arcticum* Lge.) was collected from The Dasan Korean Arctic Station of Korea Polar Research Institute (KOPRI) and cultured in growth chamber for flowering and collecting the seeds.
2. Methods - Sterilized seeds with 0.5% sodium hypochlorite were germinated on 0.8 % water agar and transfer the excised shoot segments were horizontally cultured on media contained vitamin mixture supplemented with different concentration of growth regulator.

Results and Discussion

An effective *in vitro* preservation and propagation conditions of higher polar plant Arctic Mouse-ear Chickweed (*Cerastium arcticum*) were developed. With modified Murashige and Skoog (MS) media, *Cerastium arcticum* has been able to propagate at higher temperature than its ecological growth temperature. The optimal flowering conditions in growth chamber system were 15 °C/10 °C (day/night), 3000±100 Lux, and 21/3h (day/night) of temperature, light, and photoperiod, respectively. Among the seven media tested (B5, 0.5XMS, 1XMS, 1.5MS, McCown, DBM2, and ER medium), and three kind of growth regulators with different concentration, 1X MS medium supplemented with 1 mg/L GA₃ showed best result *in vitro* tillering and biomass increase. For *in vitro* preservation, suspension culture with same medium showed the highest growth rate in the temperature of 23±1 °C. The biomass of suspension cultures of *Cerastium arcticum* was doubled by every 7days after sub-culture. The successful culture with high growth rate of the genetic resources collected from polar region in high temperature might have the advantages to economical *in vitro* preservation and effective material preparation for related research.