Cryopreservation of cell suspensions of selected Gentiana

Summary

Cryopreservation is recognised as the most efficient method of plant genome preservation and embryogenic potential of plant in vitro cultures with non-changed status. Because of the risk of biological degradation of tissue during freezing treatment and its various sensibility on the chilling stress, the individual treatment with cryoprotectant and parameters of the temperature decreasing is highly required.

In this presentation, following subjects will be discussed: 1) description of suspension cultures of various gentians, 2) cell pretreatments for surviving the stress of low temperature, 3) rearrangement of cell cytoplasm because of high sucrose concentrations, 4) the role of sucrose in the development of freezing tolerance and surviving of gentiana suspensions, 5) the effect of strong plasmolysis induced by 3 M glucose.

Key words: Gentiana, cryopreservation, sugar, suspension culture, ultrastructure.