

## Cryopreservation of diatoms: tips & tricks

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Diatoms are an ecological and evolutionary important group of microalgae and hold much value for aquaculture and overall biotechnological potential. In contrast to many other groups of micro-organisms, long-term maintenance of diatom strains by repeated re-inoculation is impossible due to the gradual reduction in cell size of most species, eventually resulting in cell death. Therefore, cryopreservation is the preferred strain preservation method. Cryopreservation success varies strongly with species and differs systematically between marine and freshwater diatoms. Based on previous experiences in the BCCM/DCG culture collection (Laboratory of Protistology and Aquatic Ecology, Ghent University), 80% of the tested marine species (n=50) could be cryopreserved successfully, while this was the case only for 25% of tested freshwater species (n=20). Here we formally compare different cryopreservation protocols tested for a panel of model freshwater and marine species of the genera *Pinnularia*, *Seminavis*, *Cyclotella*, *Cylindrotheca*, *Thalassiosira* and *Opephora*. Here, strategies to optimize cryopreservation procedures for diatoms and possible alternatives for the long-term maintenance of diatom species in culture collections will be discussed.