



ABSTRACT

“From Arabidopsis thaliana to Seminavis robusta: establishing a new diatom model system for functional genomics”

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Starting research on *Arabidopsis thaliana* in the 1960's our department has a long track record of using the #1 model in plant science. Although other plants are in use the major part of our activity is still on *Arabidopsis*. However, we aim to establish other model systems and I will address some questions related to the establishment of *Seminavis robusta* as a laboratory model system for research on diatoms.

Diatoms are unicellular photosynthetic algae present in marine and fresh water down to depths to which radiation can be photosynthetically exploited. Being evolutionary successful with perhaps as many as 200 000 species diatoms are major global contributors to marine primary production and to the biological carbon pump and biogeochemical cycles.

Recently, the genomes of two diatoms, *Thalassiosira pseudonana* and *Phaeodactylum tricornutum* have been sequenced (Armbrust et al. 2004; Bowler et al. 2008). These two diatoms and other algae are in use in various experiments in our department related to e.g. light acclimation and bioenergy issues.

Getting culture start help from professor Wim Vyverman's group we have set out to establish *Seminavis robusta* as a laboratory workhorse. Basic techniques for cultivation, extraction of molecules, mating and transformation and imaging are being established. We are also aiming to sequence the *Seminavis robusta* genome. This work has been started and I will briefly go through the results so far and the reasoning behind the choice of *Seminavis* as a model system.