

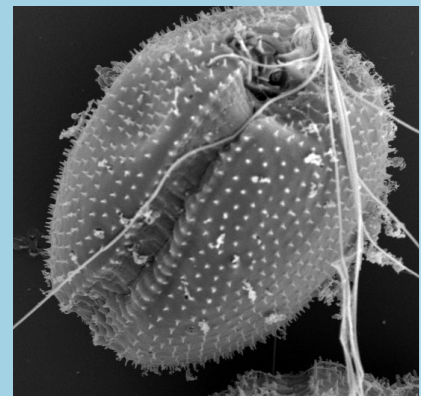


## Metabolome analysis of the microalgae *Prorocentrum minimum* by GC-MS



### General description

Primary production provides the basis for higher life on earth on land and in the ocean. Primary producers are able to convert light energy in chemical energy and biomass which serves as nutrition for other organisms. Furthermore they are the main CO<sub>2</sub> consumers and source of oxygen generation. About half of the primary producers occur in the ocean as phytoplankton. For this reason a better understanding of metabolic behavior and adaptation of these organisms to changing environmental conditions is of great ecological interest especially in times of climate changes.



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### Project background

In metabolomics approaches, different conditions (e.g. different light intensities) are applied to biological samples (e.g. photosynthetic cells) and metabolites of the samples are analyzed. These metabolites are products of cellular processes and represent the response of e.g. an organism to a certain condition. Metabolic characterization requires the extraction and quantification of metabolites from an organism. There are several methods to perform this, for example gas chromatography (GC) coupled to mass-spectrometry (MS) which is used in our lab to answer this questions.

### Thesis content – utilized methods

- cultivation and analysis of microalgae under different conditions( e.g. different salt concentrations)
- co-cultivation with bacteria and stable isotope labeling
- GC-MS analysis and data processing

Interested?

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