

Chemical Defenses in a Toxic Dinoflagellate: Mechanisms and Constraints

Data Policy Compliance

- The project investigators will comply with the data management and dissemination policies described in the NSF Award and Administration Guide (AAG, Chapter VI.D.4) and the NSF Division of Ocean Sciences Sample and Data Policy.

Pre-Cruise Planning

Not Applicable. This research does not involve cruises.

Description of Data Types

Data from this project are experimental and generated under controlled laboratory conditions: Paralytic Shellfish Toxins (STX and its derivatives), reactive oxygen species, cell growth rates of the dinoflagellate *Alexandrium*, grazer density, and nutrient concentrations.

Data and Metadata Formats and Standards

Raw data from experiments will first be recorded into laboratory notebooks, then (as rapidly as practical) transcribed verbatim into Excel spreadsheets. Data include date of experiments, experimental conditions, and values of the independent and dependent variables; e.g., independent variable: Grazer density (numbers per liter). Dependent variables: *Alexandrium* cell density (cells per liter), cell toxin content (mol of STX), and cell growth rate (per day). Data can then be converted into ASCII files for distribution to other parties.

Data will be flagged for errors (e.g., negative values when only positive ones are possible) by qualified personnel in the laboratory (e.g., graduate students, postdocs, PI).

Metadata will be prepared in accordance with BCO-DMO conventions (i.e. using the BCO-DMO metadata forms) and will include detailed descriptions of collection and analysis procedures.

Data Storage and Access During the Project

The investigators will store project data (including spreadsheets, ASCII files, images and videos) on laboratory computers (usually at least the PI's and a lab computer) that are backed up by the University's central IT organization. Data are also stored in a hard drive, which is periodically backed up.

Mechanisms and Policies for Access, Sharing, Re-Use, and Re-Distribution

Ultimately, data acquired from this project will be preferentially published, but any unpublished data will be perpetually archived. In the case of publication, many journals (e.g., PLOS; Proc. Royal Soc.) now require that all data presented in the publication be available. In such cases we will provide the data as supplementary information in the publications, or deposit the data in an appropriate depository such as DRYAD (<http://datadryad.org/>).

Data files will also be provided to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) in an Excel spreadsheet or .CSV file and metadata will be provided using the BCO-DMO Dataset Metadata submission form. Data sets produced by the science party will be made available through the BCO-DMO data system within two-years from the date of collection. The project investigators will work with BCO-DMO data managers to make project data available online in compliance with the NSF OCE Sample and Data Policy. Data, samples, and other information collected under this project can be made publically available without restriction once submitted to the public repositories.

Data produced by this project may be of interest to biological oceanographers, marine biologists and ecologists, and evolutionary ecologists. We will adhere to and promote the standards, policies, and provisions for data and metadata submission, access, re-use, distribution, and ownership as prescribed by the BCO-DMO Terms of Use (<http://www.bco-dmo.org/terms-use>).

Plans for Archiving

The PI will work with BCO-DMO to ensure data are archived appropriately and that proper and complete documentation are archived along with the data.

Roles and Responsibilities

This is a single PI project (H.Dam). The PI will coordinate the overall data management and sharing process and will submit the project data, and metadata to the Biological and Chemical Oceanography Data Management Office (BCO-DMO) who will be responsible for forwarding these data and metadata to the appropriate national archive.