

Can the hydrozoan *Clytia hemisphaerica* be a new model organism for marine ecotoxicity?

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Assessing the effects of marine pollutants usually relies on standardized ecotoxicity tests using a range of marine model invertebrates. However, these organisms are not always sensitive bioindicators nor reflect the complexity of marine ecosystems. Thus, identifying new marine model organisms representing also overlooked groups, such as cnidarians, is important. Among the hydrozoans, *Clytia hemisphaerica* (Linnaeus, 1767) is small, with a relatively short life cycle and also easy to rear and manipulate in the laboratory, and plays an important ecological role in marine pelagic ecosystems.

Here we explore the use of *C. hemisphaerica* as a novel model organism in marine ecotoxicology. Optimal culturing and test conditions (e.g., water parameters, type of well, jellyfish density, testing volume, frequency of feeding, water renewal) for juveniles (4 days old) were established through preliminary tests. Then, jellyfish were exposed for 2 days to the reference toxicant Sodium Dodecyl Sulphate (SDS; range from 0.1 to 10 mg/L) to identify valuable acute endpoints using the proposed experimental setup.

Results indicate that mortality as well as multiple sub-lethal effects, such as morphological alteration of the umbrella, feeding (number of ingested prey) and behavioral response (reaction to a mechanical stimulus), are sensible and valid endpoints to evaluate jellyfish responses. After 48h, all the endpoints proposed were affected by lower concentration of SDS, compared with acute toxicity tests on other marine invertebrates.

Overall, introducing this novel bioassay, our results highlight the promising role of *C. hemisphaerica* as practical, sensitive and ecologically relevant model in ecotoxicology investigations.