

## Chemical Diversity, Origin, and Analysis of Phycotoxins - DTU Orbit (08/11/2017)

### Chemical Diversity, Origin, and Analysis of Phycotoxins

Microalgae, particularly those from the lineage Dinoflagellata, are very well-known for their ability to produce phycotoxins that may accumulate in the marine food chain and eventually cause poisoning in humans. This includes toxins accumulating in shellfish, such as saxitoxin, okadaic acid, yessotoxins, azaspiracids, brevetoxins, and pinnatoxins. Other toxins, such as ciguatoxins and maitotoxins, accumulate in fish, where, as is the case for the latter compounds, they can be metabolized to even more toxic metabolites. On the other hand, much less is known about the chemical nature of compounds that are toxic to fish, the so-called ichthyotoxins. Despite numerous reports of algal blooms causing massive fish kills worldwide, only a few types of compounds, such as the karlotoxins, have been proven to be true ichthyotoxins. This review will highlight marine microalgae as the source of some of the most complex natural compounds known to mankind, with chemical structures that show no resemblance to what has been characterized from plants, fungi, or bacteria. In addition, it will summarize algal species known to be related to fish-killing blooms, but from which ichthyotoxins are yet to be characterized.

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