

**GENOTYPIC AND PHENOTYPIC VARIABILITY IN ALLELOCHEMICAL
POTENTIAL WITHIN POPULATIONS OF *ALEXANDRIUM TAMARENSE***

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Members of the *Alexandrium tamarense* species complex are often characterized by the expression of a toxin phenotype. The toxin profile typically consists of highly potent neurotoxins (PSP toxins). The profile of PSP toxins produced by *Alexandrium* strains is relatively stable under controlled culture conditions but can differ markedly among strains. Many strains of *Alexandrium* also express allelopathic properties against a wide range of planktonic organisms. These allelopathic compounds are unknown, but the effects do not correlate with the content of PSP toxins. Current studies indicate that multiple isolates from the same geographical population can vary considerably in their PSP toxin profiles. In a corresponding genetic analysis, genetic markers, such as microsatellites and amplified fragment length polymorphism (AFLP), have demonstrated similarly high genetic variation among isolates from discrete populations of *A. tamarense*. In addition, the analysis of other phenotypic properties, including the expression of fatty acid profiles, has revealed a correspondingly high level of underlying genetic diversity within a given population. Various strains are under study with respect to their allelochemical potential against potential grazers or protistan competitors. Cryptic genetic diversity may be an important feature in the selection and viability of particular strains responsible for the formation of natural bloom populations.