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Development, Comparison, and Validation Using ELISAs for the Determination of Domoic Acid in California Sea Lion Body Fluids

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ABSTRACT

Mortalities of California sea lions (*Zalophus californianus*) attributed to the neurotoxin domoic acid (DA) produced by the diatom *Pseudo-nitzschia* have occurred repeatedly along the U.S. west coast since the late 1990s. Quantifying the amount of DA in these animals and correlating this information with the presence of DA in phytoplankton and the local food web has become a research focus for many scientists. However, differences in materials, equipment, technical capability, budgets, and objectives of the various groups and/or agencies involved in this work have influenced the DA quantification platforms used. The goal of the present study was to compare the performance of two commercially available ELISAs for the determination of DA in a spectrum of California sea lion body fluid and to compare the results with LC/MS of the same samples. The results indicated differences among these approaches, presumably owing to matrix effects (particularly urine) and antibody reactivities. This information implies that care should be taken in attempting to compare datasets generated using different analytical platforms and interpreting the results of published studies.

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