
Changes of paralytic shellfish toxins in gills and digestive glands of the cockle *Cerastoderma edule* under post-bloom natural conditions

Maria João Botelho^{*1,2}, Sara Costa¹, Carlos Vale², Joana Raimundo^{1,2}, and Domitília Matias^{1,2}

¹Portuguese Institute for the Sea and Atmosphere (IPMA) – Avenida Brasília, 1449-006 Lisboa, Portugal

²Interdisciplinary Centre of Marine and Environmental Research, University of Porto (CIIMAR) – Rua dos Bragas 289, 4050-123 Porto, Portugal, Portugal

Résumé

Concentrations of the paralytic shellfish toxins C1+2, C3+4, B1, B2, dcGTX2+3, dcSTX, dcNEO, GTX2+3, GTX1+4, STX and NEO were determined by LC-FLD in composite samples of digestive glands and gills of *Cerastoderma edule* cockle. The specimens were sampled in Aveiro lagoon, Portugal, under natural depuration conditions (days 0, 8, 12, 14, 19, 21 and 25) after exposure to a bloom of *Gymnodinium catenatum*. Individual paralytic shellfish toxins indicated different pathways of elimination and biotransformation in digestive gland and gills. Toxin concentrations in gills were lower than in the digestive gland. Most of the quantified toxins in the digestive gland decreased during the 25 days of observation according to negative exponential curves, and only B1, B2 and NEO showed slight irregularities with the time. Concentrations of C1+2, C3+4 and dcGTX2+3 in gills decreased progressively with the time, however B1, B2 and dcSTX showed pronounced increases. Higher concentrations of those toxins in days 8 and 12 in comparison to the initial value (day 0) indicate conversion of other toxins into B1, B2 and dcSTX during those periods. It appears that inter-conversion of toxins occurs as *G. catenatum* cells are retained in gills before being transferred to other compartments.

Mots-Clés: Paralytic shellfish toxins, *Cerastoderma edule*, Gills, Digestive gland, Depuration, Bio-transformation

*Intervenant