



Abstract

# Analytical and Functional Profiles of Paralytic Shellfish Samples Extracted from *Semele proficua* and *Senilia senilis*<sup>†</sup>

Sandra Raposo-Garcia<sup>1,\*</sup>, Ana M. Botana<sup>2</sup>, Veronica Rey<sup>2</sup>, M. Carmen Louzao<sup>1</sup>, Carmen Vale<sup>1</sup> and Luis M. Botana<sup>1</sup>

<sup>1</sup> Departamento de Farmacología, Facultad de Veterinaria, Universidad de Santiago de Compostela, Campus Universitario, 27002 Lugo, Spain; mcarmen.louzao@usc.es (M.C.L.); mdelcarmen.vale@usc.es (C.V.); luis.botana@usc.es (L.M.B.)

<sup>2</sup> Departamento de Química Analítica, Facultad de Ciencias, Universidad de Santiago de Compostela, Campus Universitario, 27002 Lugo, Spain; anamaria.botana@usc.es (A.M.B.); veronica.rey@rai.usc.es (V.R.)

\* Correspondence: sandra.raposo.garcia@usc.es

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<sup>‡</sup> Presenting author (poster).

**Abstract:** Paralytic shellfish poisoning (PSP) is a human illness associated with the consumption of contaminated seafood products with the toxins known as saxitoxins and congeners. The PSP syndrome is associated to three groups of toxins: N-sulfocarbamoyl, carbamate and decarbamoyl, produced by dinoflagellates, generally by the genus *Gymnodinium*, *Alexandrium* and *Pyrodinium*. Between 2007 and 2008, episodes of PSPs contaminations in bivalves in Angola were reported. In this work, ten samples were extracted from *Semele proficua* captured in Luanda Bay and *Senilia senilis* caught in Mussulo Bay. These samples were analyzed by HPLC and functional electrophysiology in order to detect possible benzoate paralytic shellfish poisoning toxins and to determine their activity on sodium channels. These compounds were detected at higher amounts after peroxide oxidation than after periodate oxidation. All the compounds presented STX-like activity at concentrations of 6.996 µg STX eq/kg. Three of the ten samples showed an unknown peak after 8 min of peroxide oxidation which means that this unknown compound did not affect the functionality of sodium channels in cerebellar granule cells obtained in our laboratory from 7-day old mice.

**Keywords:** saxitoxin; decarbamoylsaxitoxin; sodium channels; cerebellar neurons; high-performance liquid chromatography



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