

## **CIGUATOXIN-LIKE TOXICITY IN FLESH AND LIVER OF FISHERY SPECIES FROM THE CANARY ISLANDS**

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**Abstract:** The Canary Islands have a strong fishing tradition, where the consumption of amberjack (*Seriola* spp.), dusky grouper (*Epinephelus marginatus*), black moray eels (*Muraena helena*), and common two-banded seabream (*Diplodus vulgaris*) is quite typical. This archipelago is an important hotspot of ciguatoxins (CTXs) with an established official monitoring program to detect these toxins in flesh (Sanchez-Henao et al., 2019; DG of Fisheries of the Canary Government, 2022). As the liver is one of the organs which reaches higher toxin levels, fish are usually sold gutted (Chan, 2017). Nevertheless, fish caught by recreational fishermen are not officially tested, leading to possible ciguatera poisoning (CP). The objectives of this study were to determine the presence of CTX-like toxicity in relevant species from the Canary Islands, to compare CTX levels in the liver and flesh, and to examine the possible factors that could be involved in the toxicity of these fish species. Sixty amberjack, 27 dusky grouper, 11 black moray eels, and 11 common two-banded seabream were analysed by cytotoxicity assay (CBA), and C-CTX1 was detected by liquid chromatography mass spectrometry (LC-MS/MS) in all these species. The liver showed higher CTX levels (> 8-fold as median) than its respective flesh in 91 out of 93 fish studied. In addition, 14 out of 16 individuals with no detectable CTX in flesh exhibited hepatic toxicity. None of the specimens with non-toxic liver showed toxicity in muscle. Results regarding black moray eels stand out because of the great difference between CTX concentration in both tissues. To the best of our knowledge, this is the first evidence of the presence of C-CTX1 in the common two-banded seabream and the first report of toxicity comparison between liver and muscle tissue from relevant fish species captured in the Canary Islands.

**Key words:** Ciguatoxins, Amberjack, Dusky grouper, Moray eel, Common two-banded seabream, Canary Islands

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