

Appearance of Ciguatoxin Fish in Atlantic Europe Waters

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Abstract : Ciguatera fish poisoning (CFP) is the most common non-bacterial intoxication in the world caused by ingestion of fish with bio-accumulated ciguatoxins (CTXs). It is typical in tropical and subtropical areas, mainly affecting the Caribbean Sea, Polynesia and other areas in the Pacific and Indian Oceans. Interest in Europe by the CFP is increasing in recent years as more and more cases in European hospitals are appearing, usually by people who have consumed ciguatoxin imported fish or have travelled to areas of risk for this poisoning. Since 2004 a series of poisonings raised the question of a possible occurrence of ciguatoxin in Europe, especially in the area of Macaronesia in the East Atlantic temperate zone. Furthermore, some studies have identified the presence of *Gambierdiscus* spp. in waters surrounding the Canary Islands and Madeira, a toxic dinoflagellate related to this poisoning. The toxin accumulates and concentrates through the food chain and affects to the end of the chain, the human consumer. Fish were collected from the Canary Islands waters and the toxin has been extracted and purified by using acetone and liquid/liquid partition in order to eliminate the excess of fatty acids that may interfere with the detection of the toxin. The fish extracts were inoculated in Neuroblastoma (neuro-2a) cells. After 24-h cell viability was used as an endpoint for cytotoxic effects measurement. Since 2011 our laboratory is collecting data for species such *Seriola* spp., *Epinephelus* spp., *Makaira* spp., *Pomatomus* spp., *Xiphias* spp., and *Acantocybium* spp., from all islands and including the sports fishing and professional activities, we obtained a 8% of fish that have ciguatoxin in their muscle. With these results, we conclude that the island where fishing and fish size affects the probability of catching a fish with the ciguatoxin.

Keywords : Canary Islands, ciguatera fish poisoning, ciguatoxin, Europe

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