

**BIOACCUMULATION OF PHARMACEUTICAL COMPOUNDS IN CLAMS
(RUDITAPES DECUSSATUS) SEEDED IN A RIA FORMOSA AREA INFLUENCED
BY TREATED URBAN WASTEWATER DISCHARGES**

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Pharmaceutical compounds (PhCs) are emerging contaminants of environmental-health concern that, if not controlled in Wastewater Treatment Plants (WWTPs), could adversely affect the aquatic environment and surrounding biota. Among other objectives, LIFE Impetus project - Improving current barriers for controlling pharmaceutical compounds in urban wastewater treatment plants includes studies of PhC bioaccumulation in clams.

This communication presents the preliminary data of PhC bioaccumulation in clams *Ruditapes decussatus* exposed to realistic conditions in an area influenced by discharges from a nearby WWTP, in the Ria Formosa Lagoon. This lagoon accounts for *ca.* 90% of the clams' national production. Clams taken from a relatively clean site (control) were exposed, at four different sites, along a spatial gradient of dilution of the discharged effluents (down to 1.5 km), during 1 summer month (June-July 2016). This corresponds to a period of increased anthropogenic touristic pressure in Ria Formosa and also to an enlarged clam consumption.

After depuration (*ca.* 24 h), clam extracts (n≥8), along with water from the sites where clams were collected, were analysed in duplicate, by QuEChERS-LC-MS/MS, for 24 target PhCs.

Preliminary results show the difficulty in finding pristine places regarding PhCs since residues of some of these compounds were found in the control. Even so, concentrations of PhC compounds in the clams can be considered low (in the ng/g range). The most abundant PhC in clams was caffeine, increased relatively to the control, depicting a relatively similar pattern in the water from the collection sites. However, in the water the most abundant PhC was diclofenac. Spatially, there was a general decrease of caffeine along the dilution gradient of the effluents, although this was not so evident at the farthest sampling site. This can be associated with external sources of this PhC, due to the closeness of that site to Faro city, the most populated in the region.

Key words: pharmaceuticals, WWTP, clams, Ria Formosa

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