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# First record of microplastics in marine sea slugs of the Atlantic and Pacific Ocean

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## Abstract

The record of contamination by microplastics that exists in the marine environment is large, and because of this it is important to detect the presence of these particles in the different species that inhabit the marine-coastal ecosystem, to later study what are the possible effects they cause on them. Some negative effects among marine animals have already been studied, such as problems in the swimming system where there is a slowdown in the swimming process, obstruction of the digestive system and reproductive problems. Marine heterobranch mollusks, known as sea slugs, which have ecological and socioeconomic importance, have hardly any investigation microplastics on their digestive tract. Therefore, this work addresses for the first time the presence and quantification of microplastics in the digestive tract of marine heterobranchs in the Atlantic Ocean of Brazil and the Pacific Ocean of El Salvador with the main objective of comparing the ingestion of microplastic by sea slugs from both sites, regardless of the place of collection, as it is known that there is a record of microplastic contamination in both oceans. The presence of microplastics was confirmed for the first time in marine heterobranchs from both oceans, with a total of 2,577 microplastic particles in their digestive tract. The morphological characterization of the particles was carried out, studying their distribution by type, color and size. Microplastic particles were registered, but also macroplastic particles, with a low amount of 27 particles, in contrast to the total microplastic quantified in this work.

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