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Microplastics Isolated from Saltwater Clam Paratapes undulatus from Wet Market at Shah Alam, Selangor, Malaysia
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Abstract
Plastic waste has become a serious environmental threat because of large scale demand and poor disposal methods. Microplastics, defined defined as plastic waste with a diameter spanning from 5 mm to 1 μm, may easily enter the ocean and cumulatively ingested by marine life, which will eventually be consumed by humans. The goal of this study is to determine the types of microplastic that can be found in the saltwater clam Paratapes undulatus collected in Kuala Selangor, a fishery hub in Peninsular Malaysia. A total of 30 P. undulatus samples were collected and the soft tissue inside was dissected and digested using NaOH. The digestates were then vacuum-filtered to obtain the microplastics. Microplastics were identified based on their physical characteristics under microscopic examination (colour, shape and size). Fourier Transform Infrared Spectroscopy (FTIR) was used to determine the polymers based on the functional group of the plastics' molecular structure. A total of 2,072 microplastic particles were isolated from all clam samples. In terms of colour and shape, the majority of microplastics were black (64.48 %) and in the form of fibres (97.2 %). Most of the microplastic particles had sizes ranging from 0.5 to 1 μm and 1 to 2 μm. Polystyrene (PS) and polymethyl methacrylate (PMMA) were two common polymers. This study indicates that clams harvested off the coast Kuala Selangor may be contaminated with microplastics from their habitat. More research is needed to assess the toxicity and potential threat of microplastics to human health when consuming seafood.

Author Keywords
FTIR analysis; Microplastic; Paratapes undulatus; Seafood

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