

Environmental Research, Technology Demonstration and Conference Project

ECF Project:	ECF 2021-45
Project Title:	Comprehensive risk assessment on indo-pacific finless porpoises exposed to plastic chemical additives using physiologically based toxicokinetic modelling and suspect screening
Principal Investigator:	Dr Ruan Yuefei, State Key Laboratory of Marine Pollution, City University of Hong Kong
Total Approved Grant:	\$498,000
Duration:	1/4/2022 to 31/3/2024
Project Status/Remarks:	On-going
Project Scope:	<p>The fight against plastic pollution in recent years has been hit by the COVID-19 pandemic. However, there has not been much research on the chemical damage caused by the presence of chemical additives released from plastics. Because of plastic accumulation and fragmentation in the ocean, these chemicals, many of which are organic pollutants, constitute an increasing ecotoxicological risk for marine organisms including mammals. Finless porpoises (<i>Neophocaena phocaenoides</i>) reside in Hong Kong waters at the edge of intensive urban development areas, and they are regarded as bio-indicators for evaluating the pollution status and ecological health of Hong Kong's marine environment.</p> <p>To characterise the risks to porpoises exposed to the potential release of plastic chemical additives, research on pollutant inventory screening and tissue-specific pollutant confirmation should be directed to provide insights into comprehensive risk assessment on the whole-body burden of diverse classes of these chemicals. It is proposed to develop suspect screening techniques for identifying a wide range of plastic chemical additives present in different types of porpoise tissues, and apply physiologically based toxicokinetic modelling to simulate whole-body burden of pollutant exposure. This knowledge will help to sustainably manage, value, protect and conserve the future marine environment and ecosystems of the finless porpoises.</p>
Summary of the Findings/Outcomes:	To be available upon completion of the project