

TH101 Organotin contamination in market seafood and its implication for human health risk in Hong Kong K.K. Ho, Y. Mak, The University of Hong Kong / The Swire Institute of Marine Science and School of Biological Sciences; E. Mak, University of Ottawa / Department of Earth Sciences, Faculty of Science; K. Leung, The University of Hong Kong / The Swire Institute of Marine Science and School of Biological Sciences.

Organotins (OTs), in particular tributyltin (TBT) and triphenyltin (TPT), have caused widespread adverse effects on marine organisms ever since their wide application as biocides in 1960s. For instance, TBT can induce the abnormal development of imposex in marine gastropods, and inhibit growth and development in oysters. A mandatory global ban on the use of OT-based antifouling systems has been enacted by International Maritime Organization to minimize their environmental impacts since September 2008. It is, therefore, anticipated that there will be a reduction of OT pollution in marine environments around the world. However, previous studies showed that OT are still heavily contaminating Hong Kong's waters. Humans can potentially uptake OTs via consumption of contaminated seafood, and high levels of these chemicals present in our body tissues may lead to health problems. In this study, we measured the tissue concentrations of OTs (i.e., mono-BT, di-BT and TBT, mono-PT, di-PT and TPT) in 12 commonly available seafood species in Hong Kong including three gastropod, three bivalve and six fish species. The highest total OTs concentration was 2325.8 $\mu\text{g kg}^{-1}$ dry weight in the tongue sole *Paraplagusia blochi*, while the Babylon shell *Babylonia areolata* also showed a considerably high amount of total OTs (1751.4 $\mu\text{g kg}^{-1}$ dw). TPT was the most abundant residue among the six OTs, accounting for 56-97% of total OTs. Following a standard risk assessment protocol, the non-cancer hazard quotients (HQs) and hazard indices (HI; i.e., summation of HQs) were determined. The highest HQ for TPT was 0.92 in *P. blochi* while the HQs for TBT and DBT were much less than 1. HI of *P. blochi*, however, is greater than 1 indicating that it is likely to have certain risks of consuming this species as seafood. Evidently, OTs are still persistent in Hong Kong's marine environments. TPT, in particular, should be the priority pollutant of concern. Appropriate management actions should be taken to control the use and release of OTs in the region in order to safeguard the marine ecosystem and human health.