

PCBs, PBDEs AND THEIR METABOLITES IN SERUM OF HARBOUR SEALS AND HARBOUR PORPOISES

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The bioaccumulative potential and toxicity of polychlorinated biphenyls (PCBs) and polybrominated diphenylethers (PBDEs) in marine mammals has been the focus of numerous papers worldwide. Although PCBs and PBDEs may undergo metabolic/enzymatic breakdown leading to methylsulfone and hydroxylated metabolites, recent concerns have been raised about the presence and health effects of some of these metabolites in wildlife. Harbour seals (*Phoca vitulina*) and harbour porpoises (*Phocoena phocoena*) are common marine mammals in European coastal waters. They are known to accumulate high PCB and PBDE concentrations in their tissues because of their longer life spans and top position in aquatic food chains. Profiles of PCB and PBDE congeners in harbour seals suggest that these animals have a higher capacity of metabolizing several congeners compared to other marine mammal species, such as the harbour porpoises. However, considering the assumed toxicity of the resulting metabolites, a higher metabolism of PCBs and PBDEs might not be an advantage after all. The objective of the present study was to investigate the levels and profiles of PCBs, PBDEs and their hydroxylated metabolites in blood of harbour seals and porpoises in order to elucidate the metabolism of PCBs and PBDEs. Results show that individual variation was limited within each species whereas the body condition, particularly emaciation, has a major influence on the levels of chlorinated and brominated contaminants in serum. In general, harbour seals accumulate less compounds and have mostly lower concentrations than harbour porpoises possibly as a result of a better developed metabolism.