Variations in residues of persistent organic pollutants in a platypus (Ornithorhynchus anatinus) at consecutive samplings

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sampling period. Furthermore, the SF from liver samples collected until 20 DPD also contained sufficient infectious RHD virus to kill all susceptible recipient rabbits. However, SF from liver samples collected at 26 and 30 DPD did not kill any of six recipient rabbits, despite the presence of viral antigen in the SF, as demonstrated by ELISA. Three of these six surviving rabbits developed antibodies to RHD virus, one of three inoculated with SF from liver collected at 26 DPD, and two of three from liver collected at 30 DPD.

This study yielded preliminary information on the persistence of RHD virus in the liver of infected rabbit carcasses held at 22°C. While viral antigen could be detected for at least 30 DPD in a decomposing liver, infectious RHD virus survived for only 20 to 26 days. After this point, the virus presumably began to degrade rendering it non-infectious. Nevertheless, there was sufficient viral antigen in the SF of decomposing livers collected 26 and 30 DPD, firstly, to be detected by antigen-capture ELISA, and, secondly, to cause seroconversion in inoculated susceptible rabbits. These findings indicate that persistent virus in infected rabbit carcasses may be a source of infection to other rabbits by mechanical transmission from scavengers and insects that feed on the carcass.

The results of this small study suggest that, in addition to direct rabbit to rabbit transmission of the virus and the possibility of vector-borne transmission of the disease, the persistence of virus in infected carcasses may be an important factor in the epidemiology of RHD.

References


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Another item of interest was that the concentrations of PCBs in this animal were much higher than those of 16 other platypuses sampled in the immediate vicinity. The lipid content of the tail adipose tissue in these animals varied from 14 to 67% and PCB concentrations varied from 0.07 to 1.42 μg/g. It is suggested that the animal with the very high residues had travelled from near the town of Exeter where there had been a verified spill of PCBs in transformer oil (P Tattersall personal communication). This possible source of the PCBs in the animal’s tailfat was further suggested by the fact that PCBs previously used in transformer oils in Tasmania were highly chlorinated (personal communication Tasmanian Department of Primary Industry Water and the Environment). While the distances between the two sites are in the order of 10 km by land and up to 20km by water it is feasible for a platypus to traverse such distances.

These studies were approved by the University of Tasmania’s Animal Ethics Committee, permit number 97054.

References