

Research Project for Masters Student

Project Title:

Investigation of the development of the immune system of brushtail possum pouch young.

Project Supervisor:

Susan Hemsley

(02) 93513242

shemsley@usyd.edu.au

One Sentence Project Summary: (single sentence for Google-style search results)

This project aims to characterise chronologically the development of brushtail possum pouch young tissues to determine the ages at which different lymphoid tissues gain mature structure and are populated by T lymphocytes, B lymphocytes and plasma cells

Project Synopsis: (about 250 words max)

The information obtained from this project will result in greater understanding of the way in which the immune system develops in marsupials through the detailed investigation of one species – the common brushtail possum. Although the findings will be focused on a particular species, they will represent a significant addition to the very limited previously published studies of marsupial immune system development and thus will add to fundamental understanding of marsupial immunology. In addition, outcomes of the study will have direct implications for the development of effective strategies for optimal care and maintenance of health in orphaned young.

Specifically, the project will determine the presence, histological (microscopic) organisation and population by lymphocytes and plasma cells of the major lymphoid tissues of the immune system. While functional studies will not be possible with the samples available, likely functional capabilities can be extrapolated from these structural studies and from earlier work carried out in other species. As well as providing fundamental information about the development of the brushtail possum immune system that is currently lacking, ultimately it is envisaged that this knowledge can be used to better inform veterinarians and wildlife carers about the capacity of pouch young of different ages to respond to infectious disease, thus leading to improved care and outcomes for orphaned young.

Other Information: (e.g. scholarships/funding available, etc.)

This project would be best suited to a Masters program initially. Project funding is confirmed but scholarship funding would need to be obtained from other sources
