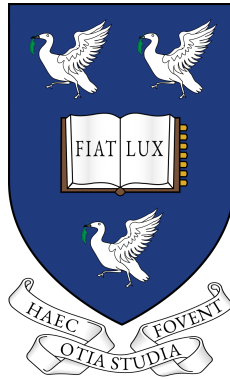


Standard operating procedure (EPA)

Anders Jensen



Equine Protein Atlas

Lymph Node

Background

Lymph nodes in horses play a vital role in immune surveillance and pathogen defense, filtering lymphatic fluid and hosting immune cells such as lymphocytes and macrophages. The submandibular lymph nodes, located beneath the jaw, are particularly important as they drain lymph from the head, including the oral cavity and pharyngeal region. These nodes are frequently examined in equine health assessments, as they can swell in response to infections such as strangles, a common equine respiratory disease. With age, the functionality of lymph nodes, including the submandibular ones, may decline due to immunosenescence. This age-related process leads to reduced lymphocyte production and impaired immune responses, making older horses more susceptible to infections and slower to recover from illnesses. Additionally, the structural integrity of lymph nodes can deteriorate with ageing, potentially affecting their ability to filter pathogens effectively.

Equipment needed

1. Scalpel
2. Tweezers
3. Scissors
4. Liquid Nitrogen
5. 10% Formalin

Methods

1. Collect equine heads from abattoir or following informed consent and ethical approval from horses donated for veterinary research . Take details of age, breed and sex from passport. Avoid leaving head in fridge for more than 24h.
2. If this is not possible use equine dentition to determine age and sex (Click here)[<https://extension.usu.edu/equine/research/aging-horses-by-their-teeth>]
3. Locate sub mandibular lymph nodes by feel (Left side)
4. Cut tissue away with scalpel and remove lymph nodes with scissors
5. Split the tissue into two
 - A. One part into 10% formalin in an appropriate container for histology and one for protein which will be snap frozen.
 - B. Place into an appropriate sized and LN proof tube. Ensure tubes are suitable for liquid nitrogen
6. Snap freeze at least 200mg in liquid nitrogen
7. Annotate sample with age, type of tissue and date collected
8. Transfer to labelled box store at -80°C (Age, Type of Tissue, Date of collection)
9. Take more lymph nodes for histological processing
10. Store in 10% Formalin