

Gary Entrican Interview



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This month we focus on Gary Entrican, a veterinary immunologist and principal research scientist based at the Moredun Research Institute in Scotland. Gary is also the Chair of the International Union of Immunological Societies (IUIS) Veterinary Immunology Committee (VIC).

Gary spoke to Immunopaedia about conducting studies in ruminants as well as the immunology behind chlamydia infections in sheep and cattle.

Name: Gary Entrican

Position: Principal Research Scientist and Honorary Professor

Research Interest: Immune regulation, disease pathogenesis and

vaccine development for farmed ruminants, with particular reference to diseases caused by intracellular pathogens

How difficult is it to conduct studies in ruminants? There are advantages and disadvantages to conducting immunology research in ruminants. Their size permits detailed investigation and repeat sampling of lymphatic drainage, a disadvantage is the relative lack of immunological reagents in comparison to laboratory rodents/humans. We have recent publications describing these issues: [Entrican, 2015. *Molecular Immunology*](#); [Wattegedera, 2017. *Veterinary Research*](#).

Which specific animals do you focus on? Sheep and cattle

How does ruminant chlamydia infection differ from humans? There are several chlamydia species that infect humans, ruminants or both, and the pathogenesis of these infections can vary greatly. This is important when thinking about comparative immunology and what lessons can be learned from host-pathogen interactions and adaptations across species

What immune responses are triggered by this infection? Cellular and humoral, with strong evidence that cellular immunity is important for controlling the intracellular phase of the infection

How does the infection evade the ruminant immune response? Chlamydia are very successful intracellular bacteria that survive in the face of a competent immune response. They do this by entering a persistent phase.

How has your research helped in understanding the pathogenesis of ruminant chlamydia infection? We have identified inflammatory mechanisms in the sheep placenta associated with abortion and have conducted comparative studies of innate immunity in cattle and sheep in an attempt to identify why abortion commonly occurs in sheep, but rarely in cattle. We have also identified the mechanism by which chlamydial growth is controlled by host cytokines.

Interview by Thandeka Moyo