

## Detection and characterization of an immunodominant antigen present on the surface of *Ascaris* L3 larvae.

J. Vlaminck, J. Vercruysse, P. Geldhof.

Molecular Veterinary Parasitology, Ghent University, Belgium.

The human roundworm *Ascaris lumbricoides* is estimated to infect over 800 million people and is a significant public health problem. The closely related pig parasite *A. suum* plays an important role in veterinary medicine and represents a suitable model for *A. lumbricoides*. A continued exposure to *Ascaris* induces immunity at the level of the gut in pigs, protecting the host against the migrating larvae. The objective of this project was to identify and characterize parasite antigens targeted by this immune response that may be crucial for parasite invasion and survival. Pigs were immunized by trickle infection (100 *A. suum* eggs 5 times per week) for 30 weeks, challenged with 1,000 eggs at week 32 and euthanized two weeks after challenge. At necropsy, there was a 100% reduction in L4s recovered from the intestine and a 97.2% reduction in white spots on the liver in comparison with challenged non-immune controls. Antibodies purified from the intestinal mucus of immune pigs were subsequently used to probe L3 larval extracts resulting in a strong specific recognition of a 12kDa antigen (As12). This antigen is present on the surface of infective L3 larvae and is shed actively. As12 appears to be a glycolipid that contains phosphorylcholine, and it cannot be visualized by protein staining. Furthermore, As12 is highly resistant to different enzymatic and chemical treatments. This molecule could be of significant importance to the survival of the parasite during the initial stages of infection. Further studies are needed to investigate its molecular nature and its role at the parasite-host interface.