Regional immune responses with stage-specific antigen recognition profiles develop in lymph nodes of pigs following Ascaris suum larval migration

The early life-cycle of the pig round worm, Ascaris suum, involves well-defined larval development in the liver; lungs and finally the small intestine. Distinct regional immune responses to larval antigens of A. suum were observed in the draining lymph nodes of immunized and challenged pigs during larval migration. This was reflected in a transient enlargement of the stimulated lymph nodes, due to increases in numbers of B cells and CD4 T cells, and the production of A. suum-specific antibody by antibody secreting cell (ASC) cultures. Larval antigen recognition pattern of antibodies in serum, bile and draining lymph node ASC culture supernatant (ASC-probes) was examined by immunoblotting. This revealed distinct organ-specific recognition patterns of larval-specific antigens by the draining lymph nodes at different times after challenge. In particular an early larval 42 kDa antigen was recognized specifically by ASC-probes of the liver lymph nodes at 7 but not 14 days postchallenge (pc) which was not detected in other lymph nodes, serum or bile of the same pig. Similarly, a late larval antigen of 34 kDa was uniquely detected by lung and jejunal ASC-probes at 14 days pc. These observations demonstrate how development of distinct regional immune responses in tissues with different antigen stimulation cart be monitored with ASC-probes and flow cytometry.

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