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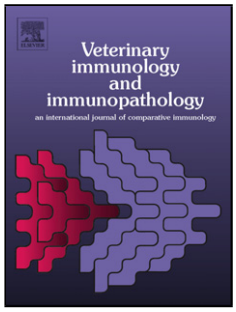

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Characterization and Comparative Analysis of Immunoglobulin Lambda Chain Diversity in a Neonatal Porcine Model

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Abstract

To elucidate how antigen exposure and selection shape the porcine antibody repertoires, we investigated the immunoglobulin lambda light chain (IGL) gene repertoires of the binary cross-bred (Yorkshire × Landrace) pig at different developmental stages, pre-suckle neonate (0 days), wean piglet (35 days) and growing pig (75 days) under normal farming conditions. Immunoglobulin lambda light transcript (IGLV-J-C) clones of the peripheral blood mononuclear cells (PBMCs) from these different developmental stages were assessed for IGL combination, junction and sequence diversity. Previous research has revealed that IGLV8 plays a major role in immunity during the early fetus stage and that IGLV3 accounts for 30% of the neonatal IGLV repertoires. Here, we found that the antibody profile exhibited salient features at different stages.

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