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Impact of age on the percentage and immunophenotype of γδ T cells in peripheral blood of dromedary camels

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Some species like cattle, sheep and poultry are known to have a high percentage of γδ T cells in their peripheral blood and they are therefore, referred to as γδ T cell high species bovine γδ T cells, which play a role in immune defense on epithelial and mucosal surfaces, may comprise up to 60% of blood mononuclear cells in young calves and decrease as the animals age. Whether camels belong to this group of species with high γδ T cell proportion in blood, it is unknown. In the current study, flow cytometry was used to evaluate the effect of age on the percentage and immunophenotype of γδ T cells in the peripheral blood of dromedary camels. Dromedary camels were grouped according to their age as young (1-5 years old) and old (6-11 years old) camels. Separated camel PBMC were incubated with monoclonal antibodies cross-reactive with camel γδ T cell antigen (WC1) and the cell surface molecules, CD62L, CD11a, CD11b and CD18 labelled cells were analyzed by flow cytometry. The percentages of WC1-positive γδ T cells were higher in young camels in comparison to older camels. Although the expression level of CD11a, CD11b and CD18 on WC1-positive cells did not differ between young and old animals, old camels showed reduced expression level of CD62L in comparison to young animals. Our results showed that camels belong to the γδ T cell high species. In addition, the higher expression levels of CD62L on WC1-positive of older camels may indicate a special age-dependent role for this cell adhesion molecule in the γδ cell migration in camels.

Recent Publications

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Biography

Jamal Hussen collected his experience in Veterinary Immunology after many years of research and teaching at different international veterinary institutions. In his current research activity, he focuses on the characterization of the cellular immune system in dromedary camel.

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