Identification of T Regulatory Cells in the Horse

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Abstract

Recently, a DNA-based vaccine regimen against equine infectious anemia virus (EIAV) resulted in disease enhancement rather than control. We hypothesized that this enhancement was associated with a regulatory T cell (Treg) response. To test this hypothesis, we used flow cytometry to compare the Treg frequency in cryopreserved peripheral blood mononuclear cells (PBMC) from the study vaccinates to that of the controls. Although there was no significant difference in Tregs (as defined by a CD4+/CD25+/Foxp3+ phenotype) between the vaccinate and control groups, there was an increase in CD4+/Foxp3+ cells in PBMC from the vaccinate group following stimulation with pokeweed mitogen (PWM). Since the regulatory function of these cells is not clear, the significance of their correlation with enhanced disease in the ponies of this study is not known. Further work is needed to functionally characterize these cells, improve flow cytometric detection of equine Tregs, and to determine the cause of the disease enhancement associated with this EIAV vaccine regimen.