

Antibody Mediated Enhancement of Dendritic Cell Responses to *Rhodococcus equi*

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Equine rhodococcal pneumonia is a devastating cause of morbidity and mortality in foals between 2 and 5 months of age. The disease is caused by *Rhodococcus equi*, a gram positive, facultative intracellular bacterium that can survive within the phagosomes of macrophages and produces pyogranulomatous lesions in the lungs. *R. equi* is widespread in horse environments, infecting virtually all horse farms to a varying degree. Through research, many strategies have been put into place for early diagnosis and control of the disease, but few have been effective. Current research is now focusing on the prevention of *R. equi* infections through vaccination. An important step in developing an effective vaccine is to better understand protective immune responses so that those responses might be specifically targeted. The research conducted in this experiment examined the affect of specific anti-*R. equi* antibody on equine dendritic cells infected with *Rhodococcus equi*, with the hypothesis being that specific antibodies would enhance the ability of foals to develop their own protective immune response when challenged with *R. equi*. Equine dendritic cells were produced and infected with *Rhodococcus equi* in the presence or absence of anti-*Rhodococcus equi* antibodies. The ability of the dendritics cells to kill the bacteria and resist cytotoxic effects was measured using viability testing and counting colony forming units. No significant difference was detected between the treatments. Further PCR work is being conducted to determine if cytokine production is enhanced in the presence of anti-*R. equi* antibody.