

## DEFINING THE PHYLOGENY OF RUMINANT *RHADINOVIRUSES*

Katherine Gailbreath, Tim Crawford and Hong Li  
Department of Microbiology and Pathology, Washington State University  
College of Veterinary Medicine, Pullman, WA 99164

Viruses in the genus *Rhadinovirus* (Family Herpesviridae, Subfamily Gammaherpesvirinae) can cause acute disease and chronic infection (+/- disease) in a wide variety of ruminants. Viruses traditionally associated with clinical signs referred to as Malignant Catarrhal Fever (MCF) Syndrome constitute one group of ruminant *Rhadinoviruses* (RRV's). The second group, currently referred to as "non-MCF", has not been associated with disease but may be nearly ubiquitous in ruminants. New RRV's are being recognized at a rapid rate, including two in Oryx identified during this study. A well-defined phylogeny is needed for accurate communication among clinicians and researchers, for rapid classification of newly recognized viruses, and for understanding and possibly predicting the relationship between viruses and their hosts.

Semi-nested degenerate PCR that amplified a 523 base-pair segment of the conserved Glycoprotein B (GPB) gene was performed on peripheral blood and/or lymphoid samples from musk ox, sheep, white-tailed deer, ibex (173 base-pair segment), goat, and oryx sera that were antibody positive to MCF viruses. PCR products were cloned and sequenced. Sequences were computer analyzed, previously published sequences for MCF virus from wildebeest and non-MCF viruses from goats and cattle were obtained, and a phylogenetic tree was constructed. Comparison with trees constructed using previously sequenced 177 base-pair segments of the conserved DNA polymerase (DP) gene validate the use of this shorter DP gene segment for detection and identification of virus. Longer segments (over 3,000 bps) of these genes are being sequenced from selected RRV's, which will further support and/or refine phylogenetic groupings as well as allow the development of even more sensitive and specific identification techniques.