

### Summary: *Mycoplasma ovipneumoniae* Diagnostics

*Mycoplasma ovipneumoniae* (Movi) is a respiratory pathogen of domestic sheep, domestic goats, bighorn sheep, and mountain goats that can both cause primary atypical pneumonia and also predispose to secondary pneumonia with other agents, including *Mannheimia haemolytica*. Animals with primary Movi infection may develop rhinitis, sinusitis, otitis media (ear droop), tracheitis (hacking cough) and bronchopneumonia. Some secondary infections, particularly *M. haemolytica*, *B. trehalosi* and *P. multocida*, can effectively obliterate the atypical pneumonia lesion, so it may be valuable to check for the presence of Movi even if the atypical pneumonia lesion is not seen.

**PCR detection of the agent:** From live animals, deep nasal swabs (dacron swabs on plastic shafts) are the preferred specimen, and will yield 50-100% more positive cultures from an infected population compared to pharyngeal swab samples. From dead animals, preferred samples are swabs or tissue samples from affected organs. Sinus, middle ear, trachea, and lung tissues are more likely to be infected during acute disease outbreaks, when the prevalence of Movi PCR positive animals may approach 100%. However, in chronically infected herds and flocks, the prevalence is much lower (0-20%). Chronically infected or recovered animals may not have any gross abnormalities, and deep nasal swabs are probably the best samples to detect carriage.

Place the swabs or tissue samples directly into mycoplasma enrichment broth (Hardy Diagnostics, Mycoplasma broth #R102 or SP4 broth #R84) and ship directly to WADDL ([http://www.vetmed.wsu.edu/depts\\_waddl/](http://www.vetmed.wsu.edu/depts_waddl/)), with a request for Movi PCR testing. WADDL incubates the broths for 3 - 5 days to enrich the culture and then runs the PCR, so the turnaround time is typically approximately one week.

**Pooling:** Pooling can reduce the cost of Movi PCR testing, when simply establishing the group status is the goal, such as when screening a cohort of animals prior to translocation. Submit the samples to WADDL the same way, but with a request for pooled Movi PCR testing. WADDL will incubate the broths individually, but pool aliquots from up to 20 animals before extracting DNA and running a single PCR test. A positive pool test confirms the presence of the agent in the group. However, a negative pool test may result from inhibitory substances in some swab samples interfering with the detection of Movi from others in the same pool, so individual testing is somewhat more reliable to confirm negative status.

**bELISA detection of antibody:** WADDL has developed a monoclonal antibody based blocking ELISA serology test that is valuable for determining herd or population exposure to Movi. The test does not work well to establish infection or immune status of individual animals. To establish herd exposure to Movi, submit whole blood (red top tubes) from ten or more animals to WADDL with a request for Movi serology. Typically, populations not exposed to this agent will have 0 - 10% of animals in which antibody is 'detected' using this test, whereas exposed populations will have 30 - 90% of animals in which antibody is 'detected'.

If you have questions or would like more information, please contact Tom Besser (phone: 509-335-6075; e-mail: [tbesser@vetmed.wsu.edu](mailto:tbesser@vetmed.wsu.edu)).