



## Animal Health Diagnostic Center

College of Veterinary Medicine, Cornell University  
In Partnership with the NYS Dept of Ag & Markets

US Postal Service Address: PO Box 5786 Ithaca, NY 14852-5786  
Courier Service Address: Upper Tower Rd Ithaca, NY 14853

### Laboratory Operations

Phone: 607-253-3900  
Fax: 607-253-3943  
Web: [diagcenter.vet.cornell.edu](http://diagcenter.vet.cornell.edu)  
E-mail: [diagcenter@cornell.edu](mailto:diagcenter@cornell.edu)

## Pneumovirus N RT-qPCR

<b>Testing Lab</b> Molecular Diagnostics	<b>Contact Name</b> Dr Amy Glaser	<b>Contact Phone</b> 607-253-3924	<b>Contact E-mail</b> <a href="mailto:alg8@cornell.edu">alg8@cornell.edu</a>	
<b>Test Description</b> A new test that identifies pneumovirus in dogs and cats. The virus has been known since the late 1930's but it was long believed to infect only rodents.	<b>Contact Name</b> Dr. Randall Renshaw	<b>Contact Phone</b> 607-253-3928	<b>Contact E-mail</b> <a href="mailto:rwr3@cornell.edu">rwr3@cornell.edu</a>	
	<b>Contact Name</b> Dr. Edward Dubovi	<b>Contact Phone</b> 607-253-3923	<b>Contact E-mail</b> <a href="mailto:ejd5@cornell.edu">ejd5@cornell.edu</a>	
	<b>Test Method</b> PCR	<b>Test Cost</b> <a href="#">Refer to Test List</a>	<b>Test Days</b> As needed	<b>Lag Time</b> 2-4 days
	<b>Methodology</b> Real-time, reverse transcription – quantitative polymerase chain reaction (RT-qPCR).		<b>Sample Collection</b> If viral transport medium is not available, submit swabs in sterile, sealed vials with several drops of saline added, to prevent desiccation. Bacterial transport medias are not appropriate. Cotton, plastic, wood-handled, and Dacron and other synthetic swabs are all acceptable. Avoid calcium alginate swabs. Submit tracheal wash specimens in sterile vials to prevent desiccation.	
<b>Collection Containers</b> 1) Swabs in Viral Transport Medium; 2) Leakproof container; 3) Sealable plastic bag or container				
<b>Required Sample</b> 1) Nasal swab, pharyngeal swab; 2) Tracheal wash, broncho-alveolar lavage; 3) Upper airway tissue, lung	<b>Collection Container</b> 1) Swabs in Viral Transport Medium; 2) Leakproof container; 3) Sealable plastic bag or container	<b>Transport</b> Overnight delivery, on freezer packs.	<b>Storage</b> Freezer Packs	
<b>Sensitivity</b> Using laboratory-generated RNA standard controls the test can reliably detect as few as 100 copies of viral RNA.	<b>Stability</b> Pneumoviruses are extremely labile. An effort should be made to begin purification for testing within 24 hrs of specimen collection.	<b>Reasons for Sample Rejection</b> Desiccated swabs may be rejected. Swabs received more than 48 hrs after collection may be rejected.		
<b>Specificity</b> There has been no indication of false positive results in the testing that has been performed up until April, 2011. Fifty apparently normal healthy dogs were test negative suggesting that there is no cross-reactivity with canine tissue or normal canine microbial flora.	<b>Testing Strategy</b> Specimens should be collected early after signs of respiratory illness appear, preferably within the first 3 days. Testing may be most appropriate for situations where dogs housed together are sequentially contracting acute respiratory disease.			
<b>Results Format</b> Positive/negative/suspect	<b>Product Identified</b> Canine pneumovirus, feline pneumovirus, and murine pneumovirus	<b>Paperwork</b> Routine AHDC Accessioning Form		
<b>Interpretation</b> Ct values up to 37.38 are positive. Ct values in the range of 37.39-40.99 are suspect. Cts 41.0 or above are negative.				

<b>Animals Tested</b>																
Amphibia	Avian	Bovine	Camelid	Canine	Caprine	Cervid	Equine	Ferret	Fish	Feline	Mammal	Ovine	Porcine	Reptile	Other	Primate
No	No	No	No	Yes	No	No	No	No	No	Yes	Yes	No	No	No	Yes	No

**Validation**  
 Validation documentation approved by the Methods Development Committee.

**Key Words**  
 pneumovirus, paramyxovirus, canine acute respiratory disease, kennel cough, feline acute respiratory disease

**References**

Renshaw, R.W., Zyllich, N.C., Laverack, M.A., Glaser, A.L., Dubovi, E.J., 2010. Pneumovirus in Dogs with Acute Respiratory Disease. *Emerg. Infect. Dis.* 16: 993-995.

Renshaw, R.W., Laverack, M.A., Zyllich, N.C., Glaser, A.L., Dubovi, E.J. 2011. Genomic analysis of a pneumovirus isolated from dogs with acute respiratory disease. *Vet. Micro.* (in press).

Percopo, C.M., Dubovi, E.J., Renshaw, R.W., Dyer, K.D., Joseph B. Domachowske, J.B., Rosenberg, H.F. Canine pneumovirus (CnPnV) is a mouse pathogen. (submitted for peer review).