



## Cornell University College of Veterinary Medicine

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# Cornell develops test for H3N2 canine influenza virus

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### The three paragraphs below are updates to the media release issued by Cornell on April 12, 2015

The Animal Health Diagnostics Center (AHDC) at Cornell has developed a serologic assay that detects antibodies to the newly identified H3N2 influenza virus. Veterinarians and pet owners should submit acute and convalescent serum samples and request influenza HAI. Samples from dogs with respiratory disease will be tested for both H3N8 and H3N2-specific antibodies. Results will be provided for both assays for the same cost as the original H3N8 assay.

The genome sequence of an influenza virus, cultured from a canine nasal swab sample from a dog with respiratory disease in the Chicago area, confirms that an Asian H3N2 virus is circulating, consistent with neuraminidase typing performed at the Wisconsin Veterinary Diagnostic Laboratory and preliminary sequence information obtained by the AHDC at Cornell, both on April 10th.

Scientists at the National Veterinary Services Laboratories (NVSL) in Ames, Iowa completed the sequence analysis on April 15 for a virus isolated at Cornell on April 9. All eight genome segments of the virus match closely (99% identity) with viruses isolated from dogs and cats from South Korea. This suggests that the virus likely came from this geographic region, but not necessarily from South Korea. The virus sequenced shows no evidence of reassortment with Canine H3N8 viruses or any North American H3N2 avian influenza viruses. The Asian-origin canine H3N2 influenza virus is also distinct from human seasonal A(H3N2) influenza viruses. ... Sequences will be accessioned in GenBank as soon as possible and made available to the general community.

### Begin April 12 news release:

ITHACA, N.Y. – The canine influenza outbreak afflicting more than 1,000 dogs in Chicago and other parts of the Midwest is caused by a different strain of the virus than was earlier assumed, according to laboratory scientists at Cornell University and the University of Wisconsin. Researchers at Cornell say results from additional testing indicate that the outbreak is being caused by a virus closely related to Asian strains of influenza A H3N2 viruses, currently in wide circulation in southern Chinese and South Korean dog populations since being identified in 2006. There is no evidence that it can be transmitted to humans.

The outbreak in the Midwest had been attributed to the H3N8 strain of virus, which was identified in the U.S. dog population in 2004 and has been circulating since. The H3N2 virus had not been previously detected in North America. The outbreak in Chicago suggests a recent introduction of the H3N2 virus from Asia.

Testing of clinical samples from the outbreak conducted at The New York State Animal Diagnostic Laboratory at Cornell indicated that the virus was Influenza A. Further testing led researchers to believe a new strain was at fault. Subsequent testing, carried out with the assistance of the Wisconsin Veterinary Diagnostic Laboratory, identified the new subtype as H3N2. The National Veterinary Services Laboratories in Ames, IA is sequencing two isolates from this outbreak, which were isolated at Cornell, to facilitate rapid complete characterization of the viruses.

Both Influenza strains can cause high fever, loss of appetite, coughing, nasal discharge, and lethargy. Symptoms may be more severe in cases caused by the H3N2 virus. Some infected dogs may not show symptoms at all.

H3N2 has caused infection and respiratory illness in cats.

Veterinary professionals are advised that diagnostic testing of samples from sick pets can be done using a broadly targeted Influenza A matrix reverse transcriptase-polymerase chain reaction assay (Rt-PCR). The canine-specific Influenza A H3N8 Rt-PCR in use in several laboratories will not detect this virus. Serology is also currently not available as the H3N2 virus is different enough from H3N8 that antibodies may not cross react. However, an H3N2-specific serologic assay is under development and will be available soon.

It is not known if the current vaccine will provide any protection from this new virus. It does protect against H3N8, which is in circulation in some areas. Other preventive advice remains the same: In areas where the viruses are active, avoid places where dogs congregate, such as dog parks and grooming salons.

Owners of symptomatic dogs and cats should consult their veterinarians about testing and treatment.