

Researchers find new virus related to measles and mumps that causes fatal kidney disease in cats

March 20 2012, by Bob Yirka



(PhysOrg.com) -- A team of researchers working in Hong Kong have discovered a new virus they are calling feline morbillivirus (FmoPV). It is apparently related to the virus that causes measles and mumps in humans and another that in dogs, causes distemper. The team believes the new virus is responsible for causing *Tubulointerstitial nephritis*, a sometimes fatal kidney disease in cats that has till now, stumped efforts to find its source. In their research, they show, as they describe in their paper published in the *Proceedings of the National Academy of Sciences*, that there appears to be a clear link between the newly discovered virus and the well known feline kidney ailment.

Tubulointerstitial nephritis is a condition where inflammation between

the tubules that carry fluid necessary for [kidney function](#), squeezes them preventing the fluids from moving, leading to death if serious enough. While its cause has been well understood in humans for some time, the reason for it in cats has remained a mystery.

Because a similar virus had been found in both humans and dogs, the researchers in Hong Kong surmised that it was likely present in cats as well. To find out, they began testing stray cats found wandering around both Hong Kong and mainland China, looking for DNA similarities to the other viruses. In all, out of 457 cats tested, 56 tested positive for the new feline morbillivirus. Antibodies for the virus were found in almost twenty eight percent of them showing that they'd contracted the virus sometime during their lifetime.

The team then turned to performing autopsies on 27 stray cats that had been found dead around the city. Of the twelve that also tested positive for FmoPV, seven had died from Tubulointerstitial nephritis. Only two of the remaining cats showed evidence of kidney damage. These findings, they team writes, show a clear link between FmoPV and Tubulointerstitial nephritis.

The team is quick to point out that the [new virus](#) does not at this time appear to be able to infect people, and thus there is little to no health risk. Unfortunately, they add, there is still no cure for the disease, though the team next plans to begin working on a vaccine right away.

More information: Feline morbillivirus, a previously undescribed paramyxovirus associated with tubulointerstitial nephritis in domestic cats, *PNAS*, Published online before print March 19, 2012, [doi: 10.1073/pnas.1119972109](https://doi.org/10.1073/pnas.1119972109)

Abstract

We describe the discovery and isolation of a paramyxovirus, feline

morbillivirus (FmoPV), from domestic cat (*Felis catus*). FmoPV RNA was detected in 56 (12.3%) of 457 stray cats (53 urine, four rectal swabs, and one blood sample) by RT-PCR. Complete genome sequencing of three FmoPV strains showed genome sizes of 16,050 bases, the largest among morbilliviruses, because of unusually long 5' trailer sequences of 400 nt. FmoPV possesses identical gene contents (3'-N-P/V/C-M-F-H-L-5') and is phylogenetically clustered with other morbilliviruses. IgG against FmoPV N protein was positive in 49 sera (76.7%) of 56 RT-PCR-positive cats, but 78 (19.4%) of 401 RT-PCR-negative cats (P

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