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CORONAVIRUS DISEASE 2019 UPDATE (56): CHINA (HONG KONG) ANIMAL, DOG, FINAL SEROLOGY POSITIVE

A ProMED-mail post

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Source: Press release, Government of Hong Kong SAR [edited]

<https://www.info.gov.hk/gia/general/202003/26/P2020032600756.htm>

Pet dog further tests positive for antibodies for COVID-19 virus

A spokesman for the Agriculture, Fisheries and Conservation Department (AFCD) said today (Thu 26 Mar 2020) that the latest positive serology test results of the Pomeranian that previously tested weak positive for COVID-19 virus proved that the dog has been infected with the virus.

Virus isolation was performed on previous samples taken from the Pomeranian with a negative result, indicating that no live virus was retrieved. This is in line with the amount of virus genetic material in the samples. Further serological testing has been conducted at the World Health Organization reference laboratory at the University of Hong Kong (HKU) on the blood sample taken on 3 Mar 2020, and the final test result is positive. This indicates that the Pomeranian had developed an immune response to the viral infection with antibodies found in the blood [see comment]. Veterinary experts and scientists from the Jockey Club College of Veterinary Medicine and Life Sciences of City University of Hong Kong, as well as the School of Public Health of the HKU, have concluded that the result further supported that the Pomeranian has been infected with the COVID-19 virus.

The spokesman also stressed that these cases of infection in dogs appear to be infrequent. As of yesterday (25 Mar 2020), the AFCD has conducted tests on 17 dogs and 8 cats from households with confirmed COVID-19 cases or persons in close contact with confirmed patients, and only 2 dogs had tested positive for the COVID-19 virus.

These findings indicate that dogs and cats are not infected easily with this virus, and there is no evidence that they play a role in the spread of the virus. Nevertheless, as COVID-19 is a newly emerged disease and the situation is still evolving, the AFCD is taking a precautionary approach in quarantining animals (mammals, including cats and dogs) from households with confirmed

COVID-19 human cases.

The spokesman reminded pet owners to adopt good hygiene practices (including handwashing before and after being around or handling animals, their food, or supplies, as well as avoiding kissing them) and to maintain a clean and hygienic household environment. People who are sick should restrict contacting animals. If there are any changes in the health condition of the pets, advice from a veterinarian should be sought as soon as possible. There is currently no evidence that pet animals become sick, and under no circumstances should [owners] abandon their pets.

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[The preliminary results of the serological tests of the 17-year-old Pomeranian dog were reported as negative (20200312.7081842); the final, positive results confirm the initial statement of the HK authorities on COVID-19 infection of the dog. This dog reportedly died on 16 Mar 2020, 2 days after it was released from quarantine following the recovery of its owner and "after further tests produced negative results." According to AFCA's report, the cause of death couldn't be determined since the owner declined to conduct an autopsy.

This case was followed later by a 2nd "infected" dog (German shepherd), which is still quarantined. Both cases were duly notified to the OIE as "emerging disease" (1st case, starting 26 Feb 2020, 3 reports, at <https://tinyurl.com/whravlk>; 2nd case, starting 18 Mar 2020, one report, at <https://tinyurl.com/w4e47ej>).

The initiative of HK's veterinary authorities to check the potential role of animals, including company animals, in the epidemiology of COVID-19 presents a One Health approach, the need for which has been highlighted since the very initial stages of the event-to-become-pandemic in Wuhan. This approach has been recently again illuminated in Ref 1; the summary of the paper includes the following:

"Here, we report the epidemiological and virological characteristics of the COVID-19 outbreak. Originated in bats, 2019-nCoV/severe acute respiratory syndrome coronavirus (SARS-CoV)-2 likely experienced adaptive evolution in intermediate hosts before transfer to humans at a concentrated source of transmission. Similarities of receptor sequence binding to 2019-nCoV between humans and animals suggest a low species barrier for transmission of the virus to farm animals. We propose, based on the One Health model, that veterinarians and animal specialists should be involved in a cross-disciplinary collaboration in the fight against this epidemic."

According to earlier information (20200210.6972104), the team of China Animal Health and Epidemiology Center tested prior to 9 Feb 2020 more than 4800 samples of animals such as pigs, poultry, dogs, and cats, which were all negative, excluding new coronavirus originating from poultry and livestock (dogs and cats). As far as we know, these samples did not include animals known/suspected as exposed to COVID-19 infected people.

A US-based commercial company informed recently about the screening of "more than 4000 canine, feline, and equine specimens" with their new SARS-CoV-2 (COVID-19) RealPCR Test. Patient specimens were submitted over a 4-week period beginning 14 Feb 2020 from across the United States and South Korea and included specimens from regions such as the Seattle area, currently experiencing human COVID-19 cases. Specimens were also tested in parallel with 3 assays from the Centers for Disease Control and Prevention (CDC). "To date, no positives have been detected in any specimens. Our monitoring of canine and feline specimens submitted for diagnostic respiratory RealPCR panels is ongoing and has now expanded to Canada, all US states, and countries within the EU, including areas with high rates of COVID-19 in the human population. All samples tested for COVID-19 have been negative" (<https://tinyurl.com/sj26pwe>).

Results of any additional tests of animals for COVID-19 virus (PCR, serology, isolation), from HK or elsewhere, will be appreciated.

We are informed that veterinary labs in several countries have been recruited to participate in the mass testing of samples from humans.

Subscribers are referred to

- OIE: Q&A on COVID-19, last updated Mon 23 Mar 2020, at <https://tinyurl.com/v3geqme>;
- American Veterinary Medical Association (AVMA): "What veterinarians need to know," updated Thu 26 Mar 2020, at <https://www.avma.org/resources-tools/animal-health-and-welfare/covid-19>; and
- British Cattle Veterinary Association (BCVA): latest (24 Mar 2020) COVID-19 guidance for farm vets, at <https://www.bcva.org.uk/news/bcva-covid-19-latest-guidance-farm-vets>.

References

1. Jiumeng Sun, Wan-Ting He, Lifang Wang et al.: COVID-19: Epidemiology, Evolution, and Cross-Disciplinary Perspectives. Trends in Molecular Medicine. In press, corrected proof, available online 21 Mar 2020. doi: <https://doi.org/10.1016/j.molmed.2020.02.008>.
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HealthMap/ProMED-mail map:

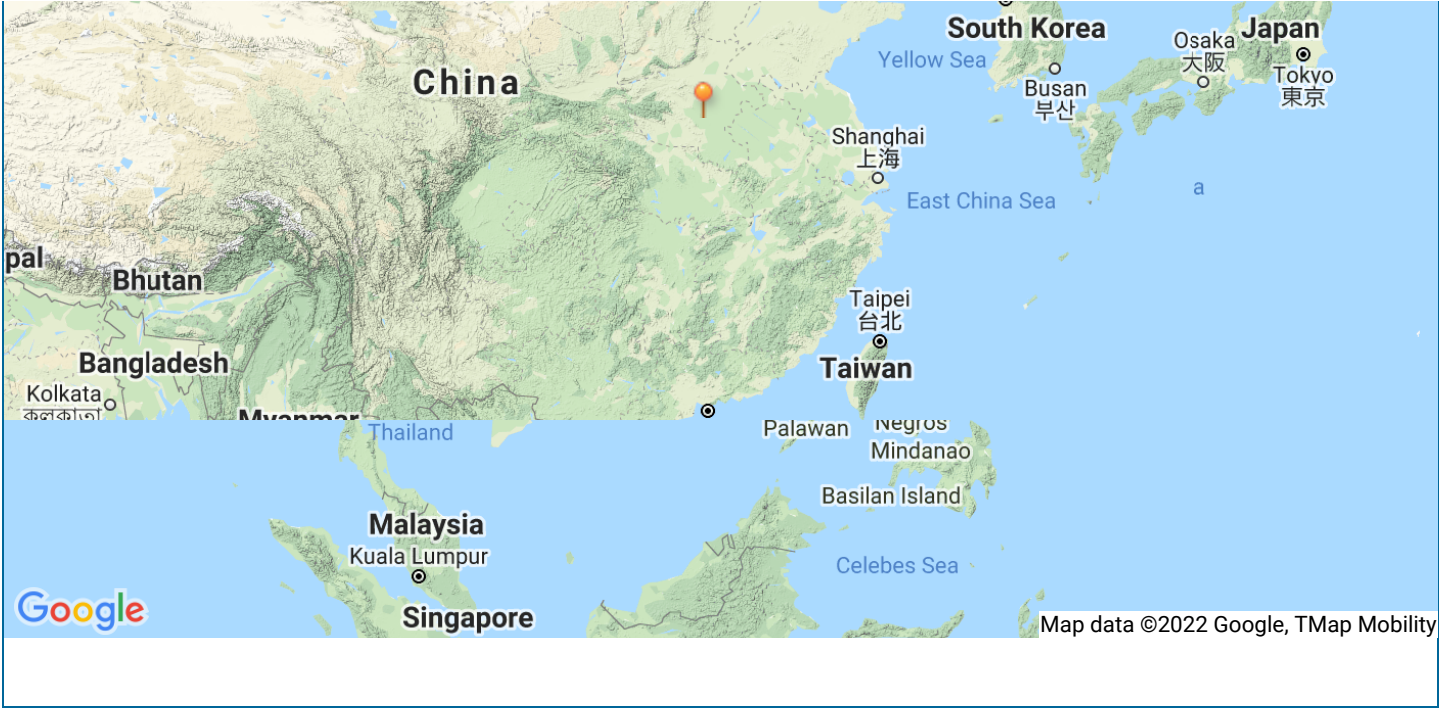
Hong Kong: <https://promedmail.org/promed-post?place=7146438,198>

See Also

COVID-19 update (50): China (Hong Kong) animal, dog, 2nd case PCR positive, OIE 20200323.7129951
 COVID-19 update (45): China (Hong Kong) animal, dog, 2nd case PCR positive 20200319.7112693
 COVID-19 update (37): China (Hong Kong) animal, dog, prelim. serology negative 20200312.7081842
 COVID-19 update (30): China (Hong Kong) animal, dog, susp, serology pending 20200306.7057595
 COVID-19 update (25): China (Hong Kong) animal, dog, susp, OIE 20200302.7040373
 COVID-19 update (22): companion animals, dog susp, RFI 20200229.7036661
 COVID-19 update (17): China, animal reservoir, wildlife trade & consumption 20200225.7024245
 COVID-19 update (11): animal reservoir, intermediate hosts, pangolin susp 20200220.7009213
 COVID-19 update (08): companion animals, RFI 20200218.7002276
 COVID-19 update (06): animal reservoir, intermediate hosts 20200217.6997782
 Novel coronavirus (40): animal reservoir, pangolin poss intermediate host, RFI 20200210.6972104
 Novel coronavirus (28): China (HU) animal reservoir 20200201.6943858
 Novel coronavirus (22): reservoir suggested, bats 20200129.6930718
 Novel coronavirus (20): China, wildlife trade ban 20200127.6922060
 Novel coronavirus (18): China (HU) animal reservoir 20200125.6915411
 Novel coronavirus (15): China (HU) wild animal sources 20200123.6909913
 Novel coronavirus (03): China (HU) animal reservoir suggested, RFI 20200114.6887480
 Novel coronavirus (01): China (HU) WHO, phylogenetic tree 20200112.6885385
 Undiagnosed pneumonia - China (HU) (07): official confirmation of novel coronavirus 20200108.6878869
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