Camels, Cattle and Coronavirus: the Middle East Respiratory Syndrome Coronavirus Hunt must Continue

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Abstract:

The prevalence of Middle East respiratory syndrome coronavirus (MERS-CoV) in animals may only have begun to be appreciated. The disease is well characterized, but significant zoonotic sources, and thus, routes of transmission of MERS-CoV may yet be identified. In this article, we briefly review the animals that potentially harbour MERS-CoV.

Main Article:

We are still unsure of the full spectrum of animals that harbour Middle East respiratory syndrome coronavirus (MERS-CoV) variants. Human MERS cases are mostly acquired in healthcare settings. However, one major reservoir of MERS may reside in the livestock that humans are surrounded by on a regular basis.

The most well defined and statistically significant source of animal-borne MERS-CoV originates from rare but direct contact between humans and camels. Contact with cattle is also described as a significant factor, but the virus has yet to be found in cows. In 2013, a single MERS-CoV PCR positive test was reported from a single bat. Distantly related CoVs have since been found in different bats, but none were MERS-CoV variants.

Known MERS-CoV-positive creatures are highlighted above, in red. Other animals that may be considered suspects because their cells support MERS-CoV replication in the laboratory or are known to express the MERS-CoV receptor (DPP4) are also shown. Some of the ways in which humans may acquire a rare MERS-CoV infection are listed underneath each animal.

More information is being uncovered on a daily basis. Stay tuned for the latest research on MERS and MERS-CoV, and the latest strategies to mitigate the spread.

References:

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