



Relationship of Rodents with Corona Viruses Infection- An Overview

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Commentary

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Abstract

Rodents are the most diverse mammals on the planet and are important reservoirs of many pathogens example Coronaviruses infect various animals, but to date, relatively few coronaviruses have been identified in rodents worldwide. Rat coronaviruses are very contagious, with transfer to susceptible rats by direct contact with infected rats, and indirectly by aerosol and fomites. The evolution and ecology of coronaviruses in rodent have not been fully investigated to human.

Keywords: Rodents; Diverse Mammals; Planet; Coronaviruses; Rat Coronaviruses; Human

Study References

A new virus, isolated from the lungs of mice, spreads to mice bred in wild colonies and leads to fatal pneumonia in newborn mice. Classified as rat coronavirus (RCV), the virus exhibits representative properties of the coronavirus group: these are useful for antibody detection useful in sero-epidemiology studies Parker, et al. [1]. The alpha coronavirus and betacoronavirus were detected in mice, *Apodemus chevrieri* in the Yunnan Province of China, indicating that *Apodemus chevrieri* is an important host of coronaviruses. Several new features have been identified in the genome of the *Apodemus chevrieri* coronavirus.

The genetic distance to other coronaviruses indicates the variable origin and evolutionary pathway of the S genes of AcCoV-JC34, LRNV, and HKU2, and these results indicate that the diversity of the coronavirus for rodents is much higher than previously expected. Further surveillance and functional studies of these coronaviruses will help to better understand rodents as host of coronaviruses, Xing-Yi Ge, et al. [2]. Rat coronaviruses are highly infectious, as they are transmitted to infected mice by direct contact with infected rats, and indirectly by aerosols and fomites [3]. During outbreaks, morbidity is high, but mortality is very low [4]. The virus is present in the target tissues for about a week

after exposure, at which time the levels of the antibody increase the infection. However, immunity is not for life.

Under experimental conditions, it was found that mice are susceptible to infection again with a homogeneous strain as early as 6 months after the initial infection and that these mice are able to transmit infection to naive mice by contacting the cage. However, the severity of lesions in infected mice is very small compared to those associated with primary infection [5,6].

Coronaviruses are a large group of viruses common in animals. Sometimes people get infected with these viruses which may then spread to other people. For example, SARS-CoV has been associated with civet cats and the MERS-CoV virus that causes Middle East respiratory syndrome is transmitted by Arab camels. Potential animal sources of COVID-19 have not been confirmed [7].

Conclusion

- Rodents are important reservoirs of many pathogens example Coronaviruses.
- The previously infected mice have a lower degree of infection in future periods.
- The evolution and ecology of coronaviruses in rodent

- have not been fully investigated to human.
- A study of the immune system of infected rodents can be used to control the effect of coronaviruses on humans, especially the Coronavirus (COVID-19), it spreads all over the world and causes many deaths in the current period. From this, can also possible to study the immune system of people who have recovered from the disease in search of a new Therapy that useful all of humanity.

References

1. Parker JC, Cross SS, Rowe WP (1970) Rat Coronavirus (RCV): A Prevalent, Naturally Occurring Pneumotropic Virus of Rats. *Archly fur die gesamte Virusforschung* 31: 293-302.
2. Ge XY, Yang WH, Zhou JH, Li B, Zhang W, et al. (2017) Detection of alpha- and betacoronaviruses in rodents from Yunnan, China. *Virology Journal* 14(1): 98.
3. La Regina M, Woods L, Klender P, Gaertner DJ, Paturzo FX (1992) Transmission of sialodacryoadnitis virus (SDAV) from infected rats to rats and mice through handling, close contact, and soiled bedding. *Lab Anim Sci* 42: 344-346.
4. Percy DH, Barthold SW (2007) *Pathology of Laboratory Rodents and Rabbits*. Blackwell Publishing, Ames, IA.
5. Percy DH, Bond SJ, Paturzo FX, Bhatt PN (1990) Duration of protection from reinfection following exposure to sialodacryoadenitis virus in Wistar rats. *Lab Anim Sci* 40(2): 144-149.
6. Weir EC, Jacoby RO, Paturzo FX, Johnson EA (1990) Infection of SDAV-immune rats with SDAV and rat coronavirus. *Lab Anim Sci* 40: 363-366.
7. WHO: World Health Organization.

