

Coronavirus

Bats could hold key to surviving coronavirus

A global study led by Melbourne researchers has found humans need to learn from bats to beat the virus.



Grant McArthur HEALTH EDITOR [Follow](#)

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A scientific review has looked at why bats don't suffer the same severe disease from the SARS-CoV-2 virus.

Humans may need to become more like bats – or at least learn from the flying mammals' immune systems – in order to overcome Covid-19.

A major scientific review of the SARS-CoV-2 virus that causes Covid has found that unlocking the secrets of why infected bats do not suffer the same severe disease could be the best hope of surviving increasingly dangerous variants.

The international effort led by scientists from Melbourne's Monash University and Hudson Institute has also pinpointed a class of drugs that mimics the bat immune system, calling for research to focus more heavily on their potential.

Lead researcher Professor Marcel Nold from Monash said the drugs, called type 1 interferons, were naturally released in bats at the first stage of coronavirus infections to prevent them progressing to dangerous inflammation in lungs and other organs.





Researchers are focusing on bats for a study on how to survive increasingly dangerous variants.

“The bat has a high basal level of these type one interferons, so they can fight off the initial assault of the virus when it comes around for the first time very quickly, without causing problems in terms of inflammation,” Prof Nold said.

“Whereas in humans, we have much lower basal levels of type 1 interferons and therefore the virus has an easier time taking hold of the body.”

In order to fly bats must burn massive amounts of energy, which in turn produced huge amounts of waste products that would cause disastrous levels of inflammation in any other mammals, humans included.

To prevent the fatal inflammation from flying, bats’ immune systems evolved to circulate high levels of the type 1 interferons, which can remove the energy waste as soon as it is created.

Publishing their review in the prestigious journal, Science Immunology, the scientists from across Australia and China reveal the same immune process that protects bats when flying also prevent inflammation when infected with a coronavirus.

The Hudson Institute’s Associate Professor Claudia Nold said administering type 1 interferon to Covid patients during the initial stage of their infections – before they suffer breathing difficulty – may offer a chance to prevent severe illness in their lungs and other organs.

Working with bat expert Assoc Prof Aaron Irving of China’s Zhejiang University, the collaboration reviewed existing clinical trials of prospective Covid treatments based on bat biology.

The found cytokine antagonists – such as type 1 interferon – offered the greatest potential of avoiding Covid disease and should be prioritised for research and development.

However, they also found different treatments were required at each stage of Covid’s progression, with immune stimulants vital to overcoming more entrenched infections and kinase inhibitors also worthwhile.

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