

VISION

Vaccine against coronavirus



The coronavirus 201-nCoV has the world in its grip. Jeroen Kortekaas, extraordinary professor of Veterinary Arbovirology and on the staff at Wageningen Bioveterinary Research in Lelystad, explains how you make a vaccine.

How do you make a vaccine?

‘The classic method is to culture the virus in the lab, deactivate it and then inject it. There are many different modern methods of developing vaccines. The CEPI (Coalition for Epidemic Preparedness Innovations) has recently financed three projects for developing a vaccine against the coronavirus. The first one is a DNA vaccine.

‘There will certainly be another coronavirus’

In this method, you build a fragment of DNA that codes for a protein in the virus and use it as a vaccine. The body then manufactures the alien protein, setting off an immune response. A second, comparable method is based on RNA. The third method is known as a subunit vaccine. You make the virus protein itself in the lab and then inject it.’

Is there a difference?

‘All three are synthetic processes, each with its own pros and cons. One is faster but less effective. The other takes longer but produces a very effective vaccine. The coronavirus is a nice exercise in seeing how fast we can get a vaccine onto the market. CEPI aims to have developed a vaccine four months after identifying the virus. But that is not the end of the line. A crucial factor is getting the vaccine accepted by the authorities. Normally that kind of admission process takes years. But we don’t have time for that now.’

Are you worried about the coronavirus?

‘No. It looks as though its virulence, the number of severe cases and deaths, is not extreme. But the virus is fairly contagious, so it may spread all around the world. In the case of SARS, the first coronavirus that caused problems among humans, the outbreak was quickly brought under control. Then came MERS, which was more deadly but fortunately not as contagious. There will certainly be another coronavirus, and it could combine the contagiousness of the present virus with the virulence of MERS. So the present efforts to combat the virus will prove very valuable in the future.’ **® RK**