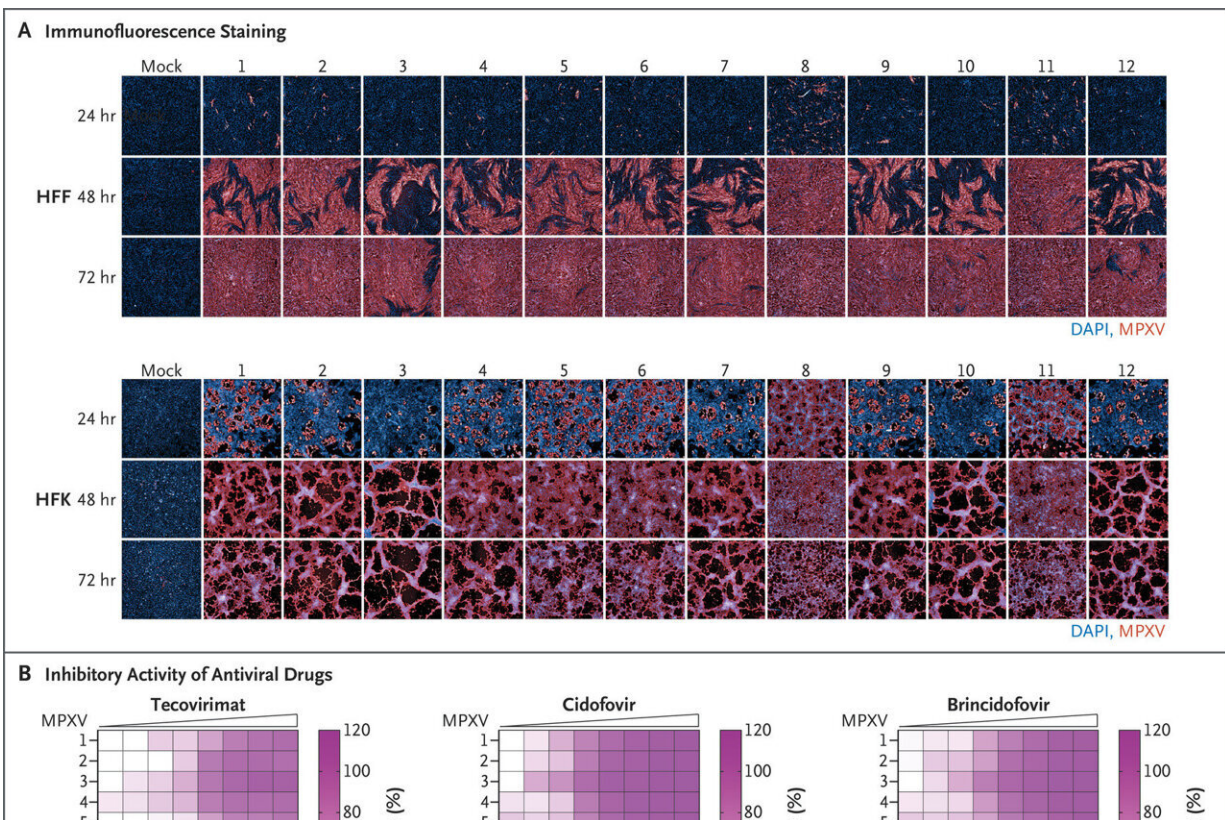


Monkeypox viruses remain sensitive to the available drugs

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Infection of primary human cells with mpox virus (MPXV) isolates obtained from patients during the current outbreak and sensitivity to antiviral drugs.
 Credit: *New England Journal of Medicine* (2022). DOI: 10.1056/NEJMc2212136

The mpox virus is closely related to the smallpox virus (variola virus), which caused large, deadly outbreaks before it was eradicated by

vaccination at the end of the 1970s. While the smallpox virus led to very severe disease progression with a death rate of about 30%, mpox is milder. Nevertheless, the mortality rate is still about 3%.

Particularly at risk of a severe course of the disease are people with a weakened immune system, elderly persons, [pregnant women](#), newborn babies and young children. Until recently, mpox outbreaks only occurred in certain parts of Africa when humans became infected through contact with [wild animals](#), typically rodents such as the Gambian pouched rat and the rope squirrel.

However, in May 2022 a first large mpox outbreak outside Africa was detected; the [virus](#) spread solely through human-to-human transmission. This ongoing outbreak has so far reached more than 100 countries and been classified by the World Health Organization (WHO) as a Public Health Emergency of International Concern.

About 10% of mpox patients require hospital treatment. Moreover, the current mpox outbreak differs from previous ones in terms of both disease transmission and symptoms. These differences raised concerns that the currently circulating mpox virus might have changed in such a way that it would no longer respond to the [antiviral drugs](#) available.

Against this backdrop, an international research team led by Professor Jindrich Cinatl from the Institute of Medical Virology, Goethe University Frankfurt/University Hospital Frankfurt, and Professor Martin Michaelis from the School of Biosciences at the University of Kent have succeeded in isolating and cultivating viruses in cell culture from 12 patients from the current mpox outbreak. This has enabled them to test these mpox virus isolates in cultures of skin cells, which has been naturally infected by the mpox virus, for their sensitivity to three drugs presently available to treat the disease: tecovirimat, cidofovir and brincidofovir.

The results showed that all 12 isolates continued to respond to treatment with clinically relevant concentrations of these commonly used drugs.

Professor Jindrich Cinatl said, "We were really concerned that the virus could have changed and become resistant to the available therapies. It is good to see that this is not the case."

Professor Martin Michaelis added, "These findings are very reassuring and give good cause to believe that the antiviral drugs already available will also be effective against the mpox virus in the current outbreak."

More information: Denisa Bojkova et al, Drug Sensitivity of Currently Circulating Mpox Viruses, *New England Journal of Medicine* (2022). [DOI: 10.1056/NEJMc2212136](https://doi.org/10.1056/NEJMc2212136)

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