

# Monoclonal antibody effective against norovirus

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Researchers from the National Institute of Allergy and Infectious Diseases (NIAID) provide the first proof of concept data showing that a monoclonal antibody can neutralize human norovirus. This research, which could one day lead to effective therapies against the virus, was published online ahead of print in the *Journal of Virology*.

"We initiated this work because there is presently no virus-specific treatment or vaccine to control the norovirus illness," says Kim Y. Green, a researcher on the study. "Our working hypothesis was that a highly specific norovirus antibody that binds to the outer surface of the virus particle might prevent the ability of the virus to infect susceptible host cells."

The team first isolated genes from chimpanzee [immune cells](#) encoding norovirus-specific antibodies. They then converted these into human-compatible full-length immunoglobulin molecules. They successfully tested two of the antibodies against norovirus infection in chimpanzees.

"An effective therapeutic antibody might be explored as both a treatment for norovirus gastroenteritis, and as a disease prevention strategy," says Green. "Consider a developing outbreak scenario in which food-handlers, healthcare workers, deployed military, or travelers could reduce risk of infection, incapacitation, and spread if a safe and inexpensive treatment is immediately available."

Norovirus causes roughly 20 million cases of [acute diarrhea](#) and

vomiting annually in the US, alone, according to the US Centers for Disease Control and Prevention (CDC). While in most people, symptoms last a day or two, for those with impaired immune systems, and the young and the aged, norovirus can be life-threatening. It is responsible for an estimated 70,000 hospitalizations and 800 deaths annually, and roughly one in 15 Americans get the disease every year. It is unusually contagious, via the fecal-oral route. People who have had norovirus remain highly contagious for at least three days after symptoms abate.

**More information:** *J. Virol.* [doi:10.1128/JVI.01376-13](https://doi.org/10.1128/JVI.01376-13)

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