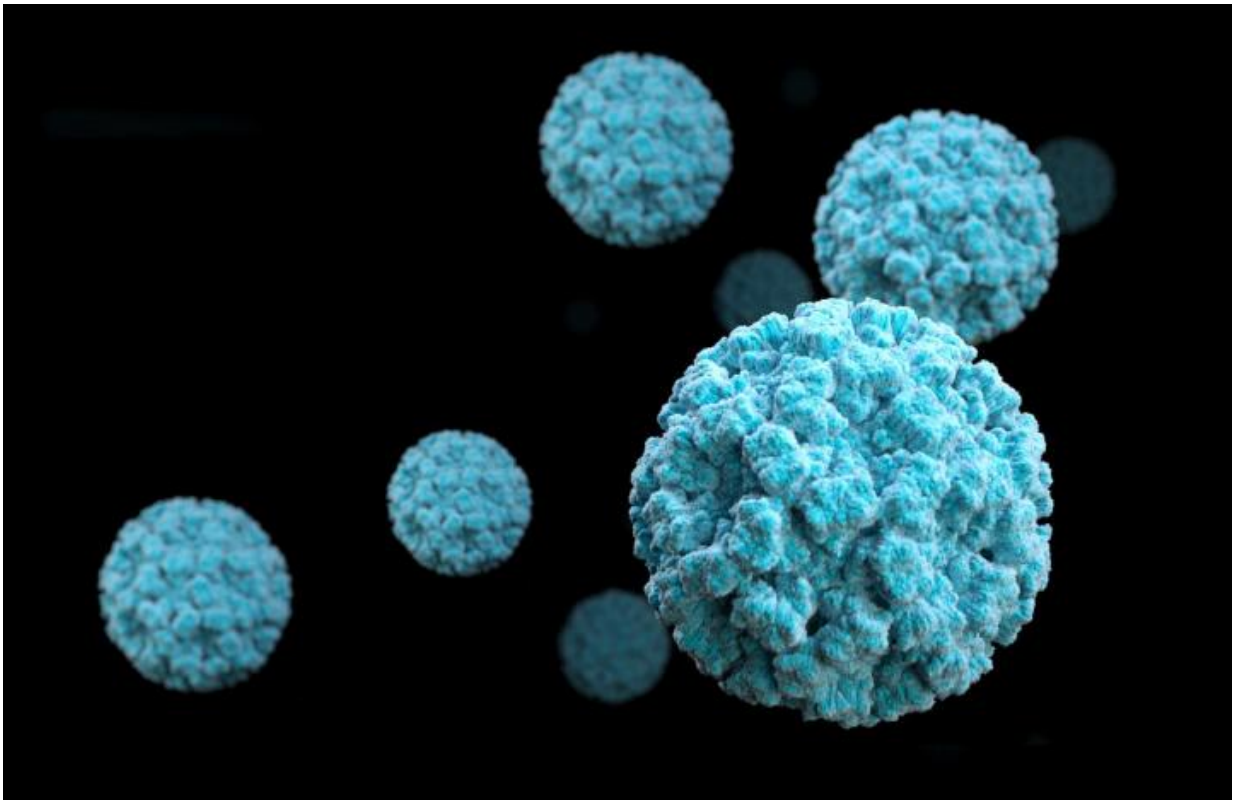
Targeting norovirus 'noxiousness'

October 4 2016, by Bill Snyder



Norovirus. Credit: CDC

Human noroviruses are the leading cause of viral gastroenteritis. Worldwide, about 200,000 children under age 5 die from norovirus infections every year. As of yet, no vaccines or antiviral agents have been licensed to treat the disease.

Now researchers at Baylor College of Medicine and Vanderbilt University Medical Center, including James E. Crowe Jr., M.D., Gopal Sapparapu, Ph.D., and graduate student Gabriela Alvarado, have determined the structural basis for norovirus "neutralization" by a human IgA antibody.

In a paper published Sept. 19 in the *Proceedings of the National Academy of Sciences*, the researchers showed that the antibody prevents the virus from binding to histo-blood group antigens on the surfaces of cells in the gut. IgA antibodies play a critical role in immune function in mucous membranes.

Because viral binding sites are hypervariable, it may be difficult to generate "broadly reactive" antibodies against them. A solution might be to develop methods that specifically target highly conserved binding sites, the researchers concluded.

More information: Sreejesh Shanker et al. Structural basis for norovirus neutralization by an HBGA blocking human IgA antibody, *Proceedings of the National Academy of Sciences* (2016). DOI: 10.1073/pnas.1609990113

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