



Synbodies for Detection of Human Norovirus

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Intellectual Property

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Invention Description

Noroviruses are hardy, highly contagious viruses that are the most common cause of acute gastroenteritis in humans. The CDC estimates that there are about 21 million illnesses caused by Noroviruses each year and about 800 of those result in death. There is no available vaccine for Norovirus infection and vaccine progress is hampered by the absence of suitable animal model/cell culture systems for preclinical testing of the candidate vaccine. Additionally, detection of viral RNA is limited to RT-PCR of stool samples.

Researchers at the Biodesign Institute of Arizona State University have developed novel synthetic antibodies (synbodies) with high affinity toward noroviruses. These synbodies bind to the geno-groups of Norovirus that are known to infect humans, namely GI, and GII. Moreover, these synbodies function in ELISA, Western Blot, and pull-down assays.

These novel synbodies and simple ELISA detection method provide an easy and sensitive detection means for GI and GII Norovirus strains and may also help enable the ultimate production of a Norovirus vaccine.

Potential Applications

- Norovirus detection platform
- The synbodies can be coupled with filtration procedures to evaluate candidate non-clinical sample matrices (food, water and environment)
- Removal of low levels of viruses present in naturally contaminated samples

Benefits and Advantages

- High sensitivity and specificity
- Used as detection or enrichment agents for Norovirus detection