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A method to distinguish potentially infectious from inactivated human norovirus

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Human norovirus strains cannot be propagated in the laboratory and current detection methods are based on RNA detection methods, such as RT-PCR. Unfortunately RNA-based methods cannot distinguish infectious virions from damaged virions unless the capsid has lost its integrity. In order to infect the host cell, a virus must first bind to its receptor. This fact has been exploited to develop a means of separating potentially infectious virus from inactive virus using virus receptor-like glycoproteins attached to magnetic beads. This extraction method when coupled with RT-PCR extraction should reduce the detection of inactive norovirus virions that are not a threat to public health. The utility of this method for testing of shellfish and other foods is currently being evaluated.

Biography

David H. Kingsley Ph.D. is a Research Virologist within the Food Safety and Intervention Technologies Research Unit of the USDA Agricultural Research Service. His research is focused on foodborne viruses such as norovirus and hepatitis A, particularly as they relate to bivalve shellfish. His primary research efforts are focused on improved detection methods for foodborne viruses contaminating shellfish and developing methods to inactivate or purge viruses from shellfish.

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