



LABORATORY ALLIANCE of Central New York, LLC

Norovirus and a New Test for its Rapid Laboratory Diagnosis

The Microbiology Department of Laboratory Alliance is pleased to announce the availability of the norovirus PCR assay as a new test service starting June 22, 2015.

Norovirus, sometimes called the "winter vomiting bug", is the most common cause of gastroenteritis in humans, affecting people of all age groups. The virus is transmitted by the ingestion of fecally contaminated food or water, person-to-person contact, or aerosolization of the virus with subsequent contamination of inanimate surfaces. Worldwide, the virus infects approximately 270 million people yearly resulting in over 200,000 deaths. In the United States, norovirus accounts for an estimated 23 million cases of gastroenteritis representing approximately 60% of all cases of acute gastrointestinal disease.

Norovirus is frequently involved in large outbreaks of infection in communal facilities, such as nursing homes, hospitals, daycare nurseries, prisons, and cruise ships. Characteristic symptoms of infection include nausea, forceful vomiting, watery diarrhea, and abdominal pain. Flu-like symptoms of general lethargy, weakness, muscle aches, headaches, and low-grade fever may occur. The disease is usually self-limiting and severe illness requiring medical intervention with fluid replacement is rare. Most patients make a full recovery within a few days of onset of symptoms.

Norovirus is classified into five different genogroups (GI to GV) of which genogroup I and genogroup II cause the great majority of human infections. Norovirus is rapidly inactivated by exposure to sufficient heating or exposure to a chlorine-based disinfectant (i.e., 1:10 dilution of household bleach). The virus is less susceptible to alcohol and detergents. There are no antiviral medications for the treatment of norovirus infection.

Until recently, the laboratory diagnosis of norovirus infection was problematic because the virus cannot be easily grown using conventional viral culture methods and the use of electron microscopy to visualize the virus in stool specimens is insensitive. Now, a new real-time PCR assay has been developed for the direct detection of norovirus GI and norovirus GII in stool specimens. The PCR assay represents one of the most sensitive methods for detecting these viruses in stool with a sensitivity of 100% and 98.5% for

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norovirus GI and norovirus GII respectively. Test results may be available within a few hours of specimen receipt instead of days using traditional methods.

Please do not hesitate to contact the Microbiology Laboratory (315-410-7067) if additional information is needed

Test:	NOROVIRUS PCR
Test Code:	NRVPCR
Method:	Multiplex Real-time PCR
Specimen Requirement:	Collect the raw or unpreserved unformed stool specimen in a clean preservative-free container.
Unacceptable Specimens:	Swab specimens or stool in transport media.
Storage and Transport:	Specimens should be transported at 2°-8°C. Store specimen at 2°-8°C. The specimen is stable for up to two days when stored at 2°-8°C.
Schedule of Testing:	Daily, first and second shift
CPT4 Code:	87798 x 2
Billing Code:	3010448

References:

1. Mead, P.S. et al. 1999. Emerg. Infect. Dis. 5:607-625.
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3. CDC. MMWR Recomm. Rep. 2011. 60(No. RR-3):1-15.
4. Kaplan, J.E. et al. 1982. 116:940-948.
5. Leshem, E. et al. 2013. Emerg. Infect. Dis. 19:1231-1238.