



# Fitzgerald

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# Norovirus

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# Norovirus Virology

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Norovirus is a genus of genetically diverse single-stranded RNA, non-enveloped viruses in the Caliciviridae family. The known viruses in the genus are all considered to be the variant strains of a single species called Norwalk virus.

Noroviruses commonly isolated in cases of acute gastroenteritis belong to two genogroups: genogroup I (GI) includes Norwalk virus, Desert Shield virus and Southampton virus; and II (GII), which includes Bristol virus, Lordsdale virus, Toronto virus, Mexico virus, Hawaii virus and Snow Mountain virus.

Noroviruses can genetically be classified into five different genogroups (GI, GII, GIII, GIV, and GV), which can be further divided into different genetic clusters or genotypes. For example, genogroup II, the most prevalent human genogroup, presently contains 19 genotypes. Genogroups I, II and IV infect humans, whereas genogroup III infects bovine species, and genogroup V has recently been isolated in mice.

## Norovirus Contraction

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Norovirus is an extremely contagious virus which can be contracted from an infected person or from contaminated food or water, or by touching contaminated surfaces. The virus attacks the digestive system and causes acute gastroenteritis, leading to stomach pain, nausea, vomiting and diarrhea and can occur in people of all ages.

Norovirus is the most common cause of acute gastroenteritis in the United States. Each year, it causes 19-21 million illnesses and contributes to 56,000-71,000 hospitalizations and 570-800 deaths. Norovirus is also the most common cause of foodborne-disease outbreaks in the United States (Ref: CDC).

Outbreaks of norovirus infection often occur in closed or semiclosed communities, such as long-term care facilities, hospitals, schools, prisons, dormitories, and cruise ships, where the infection spreads very rapidly either by person-to-person transmission or through contaminated food.

Norovirus is rapidly inactivated by either sufficient heating or by chlorine-based disinfectants, but the virus is less susceptible to alcohols and detergents, as it does not have a lipid envelope.

# Norovirus Diagnosis

Specific diagnosis of norovirus is routinely made by polymerase chain reaction (PCR) assays or quantitative PCR assays, which give results within a few hours. These assays are very sensitive and can detect as few as 10 virus particles.

Tests such as ELISA that use antibodies against a mixture of norovirus strains are available commercially, but lack specificity and sensitivity. For this reason, many laboratories worldwide have invested heavily in the development of more sensitive ELISA assays. At Fitzgerald Industries we constantly strive to develop new matched antibody pairs which can assist scientists in improving sensitivity and specificity of Norovirus ELISA assays. In addition, point-of-care assays such as lateral flow assays are essential to fast diagnosis and treatment of the virus.

## Antibody Pairs for use in Lateral Flow & ELISA

Capture Antibody/Antigen	Host	Clone #	Catalog #	Detection Antibody	Host	Clone #	Catalog #	Comments
Norovirus G2 antibody	Mouse	M59882	10-1513	Norovirus G2 antibody	Mouse	M59881	10-1512	Excellent pair for Lateral Flow & ELISA
Norovirus G1 antibody	Mouse	M59879	10-1510	Norovirus G1 antibody	Mouse	M59880	10-1511	Excellent pair for Lateral Flow & ELISA
Norovirus antibody	Mouse	M080501	10-N55A	Norovirus antibody	Mouse	M080502	10-N55B	Pairing should be tested interchangeably in ELISA
Norovirus VP1 antibody	Mouse	M120539	10-1023	Norovirus VP1 antibody	Mouse	M120540	10-1024	Minimum detection limit: 1ng/mL of recombinant VP1 protein Group II-3 and 3 ng/mL of recombinant protein of Group II-4

We are constantly developing new antibodies against norovirus genotypes and we value your requests for upcoming products. If you are looking for a norovirus protein or antibody and it is not listed here or on our website please contact us by e-mailing [antibodies@fitzgerald-fii.com](mailto:antibodies@fitzgerald-fii.com)





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