ViroReal®
Bovine Norovirus

Order No.: RTGV21
Unit: 100 reactions

For veterinary use only

Background: Noroviruses are non-enveloped, single-stranded, positive-sense RNA viruses ((+)ssRNA), belonging to the family Caliciviridae. Strains are classified in 5 genotypes (GI – GV), infecting different species, including human, bovine, swine, mice and oysters. Bovine norovirus belong to GIII. Norovirus GIII includes two genotypes (GIII.1 and GIII.2), with genotype GIII.1 represented by Jena virus and GIII.2 represented by Newbury-2 virus. Infection is associated with gastrointestinal manifestations such as diarrhea, villus atrophy and crypt hyperplasia of the proximal small intestine in cattle, especially in young calves.

PCR-platforms: ViroReal® Bovine Norovirus is developed for the ABI PRISM® (Fast) 7500 instrument (Thermo Fisher Scientific), Mx3005P® QPCR System (Agilent) and LightCycler® 480 instrument (Roche), but is also suitable for other real-time PCR instruments. ViroReal® assays for detection of viral RNA are optimized to run under the same thermal cycling conditions and with the same amplification mix.

Description: ViroReal® Bovine Norovirus is based on the amplification and detection of the ORF1 of so far known bovine norovirus genotypes GIII.1 and GIII.2 using reverse transcription real-time PCR (detection in FAM channel, 530 nm). It allows the rapid and sensitive detection of RNA of bovine norovirus from samples purified from stool (e.g. with the QIAamp Viral RNA Mini Kit, Qiagen).

Content: ViroReal® Bovine Norovirus contains primers and a probe for testing up to 100 samples. Furthermore, it contains a RNA positive control sample for bovine norovirus and a manual. The amplification mix is not included, see below. Store components at -20°C and protect from light.

Sensitivity and specificity: ViroReal® Bovine Norovirus detects at least 50 RNA copies/PCR and detects both known genotypes BoNV GII.1 and GII.2.

Internal positive control (IPC) - not included, optional: Internal Positive RNA Control Assays control RNA extraction and exclude false-negative interpretation of results caused by inhibition of reverse transcription real-time PCR. Control assays are performed in a multiplex PCR with ViroReal® Bovine Norovirus.

- Internal Positive RNA Control Assays 1 or 3 (order no. RTGMIPCR1 or 3) contain primers, a probe and an internal control RNA target in an extra tube.

<table>
<thead>
<tr>
<th>PCR Platform</th>
<th>Recommended Amplification Mix</th>
<th>Order No. Internal Positive RNA Control Assays (Optional)</th>
<th>Detection Channel</th>
<th>Pathogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABI PRISM® 7500 (Fast)</td>
<td>Taqman Fast Virus 1-step Master Mix (Thermo Fisher Scientific)</td>
<td>RTGMIPCR1</td>
<td>VIC / HEX</td>
<td>FAM</td>
</tr>
<tr>
<td>Mx3005P® QPCR System</td>
<td>Taqman Fast Virus 1-step Master Mix (Thermo Fisher Scientific)</td>
<td>RTGMIPCR3</td>
<td>Cy5</td>
<td>FAM</td>
</tr>
<tr>
<td>LightCycler® 480*</td>
<td>Taqman Fast Virus 1-step Master Mix (Thermo Fisher Scientific)</td>
<td>RTCMIPCR1</td>
<td>VIC / HEX</td>
<td>FAM</td>
</tr>
</tbody>
</table>

*For LightCycler® 480 RTGMIPCR3 is recommended
**Logarithmic view**

**Linear view**

**ABI Prism® 7500:** FAM channel, 530 nm
1:10 serial dilution of a bovine norovirus RNA target

**ABI Prism® 7500:** FAM channel, 530 nm
Bovine norovirus positive control

**ABI Prism® 7500:** Cy5 channel, 667 nm
Internal RNA positive control (internal Positive RNA Control Assays 3)

**ABI Prism® 7500:** VIC/HEX channel, 554 nm
Internal RNA positive control (internal Positive RNA Control Assays 1)


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