

Cryptosporidium RT-PCR Detection Kit

Norgen's *Cryptosporidium* RT-PCR Detection Kit constitutes a complete, ready-to-use system for the isolation and detection of *Cryptosporidium* using end-point RT-PCR. The kit first allows for the isolation of total RNA from water samples using a convenient spin-column. The RNA is isolated free from PCR inhibitors, and can then be used as the template in an RT-PCR reaction for detection of *Cryptosporidium* using the provided *Cryptosporidium* Master Mix. The *Cryptosporidium* Master Mix contains reagents and enzymes for the specific amplification of a 218 bp region of the viroid genome. In addition, Norgen's *Cryptosporidium* RT-PCR Detection Kit contains a second Mastermix, the Control 2X RT-PCR Master Mix, which can be used to identify possible PCR inhibition and/or inadequate isolation via a separate RT-PCR reaction with the use of the provided *PCR control (PCRC)* or *Isolation Control (IsoC)*, respectively. The kit is designed to allow for the testing of 24 samples and is ideal for use in quality control for water samples, as well as for surveys.



Cryptosporidium is a parasite found in water that causes an infection in mammals termed cryptosporidiosis. It is one of the most common water-borne diseases and is found world-wide. It affects the intestines of mammals and typically causes an acute short-term infection. The most common symptom is self-limiting diarrhea in healthy individuals, however in immunocompromised individuals the symptoms are particularly severe and often fatal. There is no specific treatment for cryptosporidiosis other than fluid rehydration and management of any pain. Therefore early detection of *Cryptosporidium* in water is the foremost action to prevent the infection.

Cryptosporidium RT-PCR Detection Kit Benefits

Kit for both Isolation and Detection	The <i>Cryptosporidium</i> RT-PCR Detection Kit is a complete kit that contains: 1) all the required components to allow for optimized isolation of <i>Cryptosporidium</i> RNA (user must purchase Filter Columns separately), 2) <i>Cryptosporidium</i> Detection Master Mix to allow for the optimized amplification and detection of the RNA and 3) RT-PCR Control Master Mix to control for possible PCR inhibition and/or inadequate isolations
High Sensitivity and Specificity	The limit of detection is 100 copies
Isolate high quality RNA	RNA is isolated free from inhibitors and can be used directly in the downstream RT-PCR assay.
Rapid Procedure	Isolate, amplify and detect <i>Cryptosporidium</i> in under 3 hours.
Includes controls to identify PCR inhibition and problems with RNA isolation	Kit contains a second Mastermix, the RT-PCR Control Master Mix, which can be used to identify possible PCR inhibition and/or inadequate isolation via a separate RT-PCR reaction with the use of the provided PCR control and Isolation Control respectively.
Ideal for use in a number of different applications	Ideal for use in quality control for water samples, as well as for surveys.

Cryptosporidium RT-PCR Detection Kit

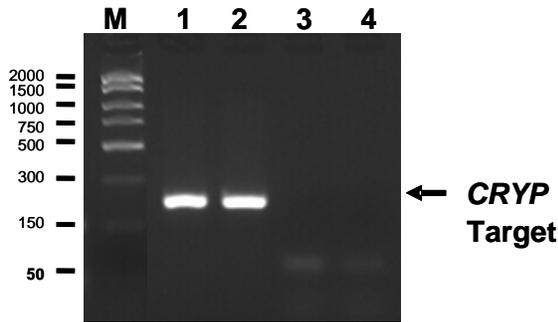


Figure 1. Detection of *Cryptosporidium* using the *Cryptosporidium* RT-PCR Detection Kit. A representative 1X TAE 1.5% agarose gel showing the amplification of CRYP positive (lane 1 and 2) negative (lane 3 and 4) controls. The size of the CRYP target amplicon corresponds to 218 bp as represented by the provided DNA Marker (M).

Cryptosporidium RT-PCR Detection Kit Contents:

1. Lysis Solution
2. Wash Solution
3. Elution Buffer
4. Bead Tubes
5. Mini Spin Columns
6. Collection Tubes
7. Elution tubes (1.7 mL)
8. CRYP 2x RT-PCR Master Mix
9. Control 2X RT-PCR Master Mix
10. *Isolation Control (IsoC)*
11. *CRYP Positive Control (PosC)*
12. Nuclease-Free Water
13. Norgen's DNA Marker
14. Product Insert

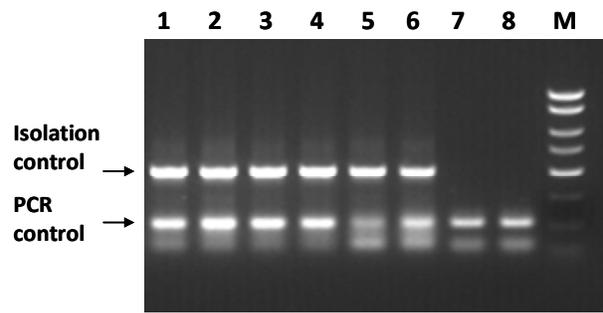


Figure 2: Detection of Isolation and PCR Control. A representative 1X TAE 1.5% agarose gel showing the amplification of **Isolation Control** and **PCR Control** under different conditions using the **Control 2X RT-PCR Mastermix**. The size of the Isolation Control amplicon and PCR Control amplicon correspond to 499 bp and 150 bp, respectively, as represented by the provided DNA Marker (M). Lanes 1 to 6 showed detection of both Isolation Control and PCR Control, suggesting that the RNA isolation as well as the RT-PCR reaction was successful. Lane 7 and 8 showed only the detection of PCR Control suggesting that while the RT-PCR was successful, the isolation failed to recover even the spiked-in Isolation control.

Storage Conditions

All buffers should be kept tightly sealed and stored at room temperature (15-25°C). Buffers can be stored for up to 1 year without showing any reduction in performance. The CRYP 2x RT-PCR Master Mix, Control 2x RT-PCR Master Mix, CRYP Positive Control (PosC) and the CRYP Isolation Control (IsoC) should be kept tightly sealed and stored at -20°C for up to 1 year without showing any reduction in performance. Repeated thawing and freezing (> 2 x) should be avoided, as this may reduce the sensitivity. If the reagents are to be used only intermittently they should be frozen in aliquots.

Cat #	Description	Quantity
39100	<i>Cryptosporidium</i> RT-PCR Detection Kit	24 tests