

Potato Spindle Tuber Viroid RT-PCR Detection Kit

Norgen's Potato Spindle Tuber Viroid (PSTVd) RT-PCR Detection Kit constitutes a complete, ready-to-use system for the isolation and detection of PSTVd using end-point RT-PCR. The kit first allows for the isolation of total RNA, including viroid RNA, from plant samples using a convenient spin-column. The viroid RNA is isolated free from PCR inhibitors, and can then be used as the template in an RT-PCR reaction for detection of Potato Spindle Tuber viroid using the provided PSTVd Master Mix. The PSTVd Master Mix contains reagents and enzymes for the specific amplification of a 327 bp region of the viroid genome. In addition, Norgen's PSTV 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 PSTVd-free plants and seeds, as well as for surveys.



The Potato Spindle Tuber Viroid (PSTVd) was the first viroid to be identified, and the natural hosts for this viroid are potatoes and tomatoes. Potato spindle tuber disease has been found in the United States, Canada, Russia and South Africa, and it is one of the most destructive diseases of potatoes. PSTVd is a small (359 nucleotide), circular, single-stranded RNA molecule closely related to the Chrysanthemum stunt viroid. The viroid attacks all varieties of potato, is known to spread rapidly and often occurs in combination with virus diseases. Symptoms of PSTVd infection range from mild to severe, with severe infections resulting in colour change in the foliage, smaller leaves, spindle like elongation, and a slower rate of sprouting.

Potato Spindle Tube Viroid RT-PCR Detection Kit Benefits

A complete optimized kit for isolation and detection	The PSTVd RT-PCR Detection Kit is a complete kit that contains: 1) all the required components to allow for optimized isolation of PSTVd RNA, 2) PSTV Detection Master Mix to allow for the optimized amplification and detection of the RNA, 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 PSTVd 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 PSTVd-free plants and seeds, as well as for surveys.

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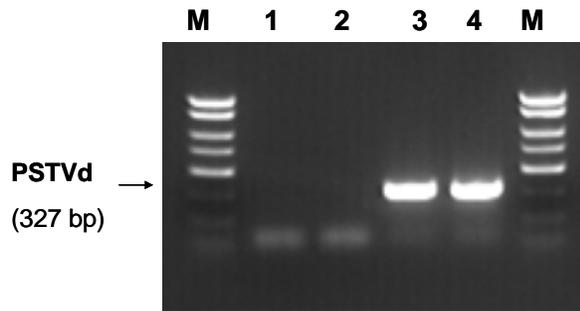


Figure 1. Detection of PSTV using the PSTVd RT-PCR Detection Kit. A representative 1X TAE 1.5% agarose gel showing the amplification of PSTVd negative (lane 1 and 2) positive (lane 3 and 4) controls. The size of the PSTVd target amplicon corresponds to 327 bp as represented by the provided DNA Marker (M).

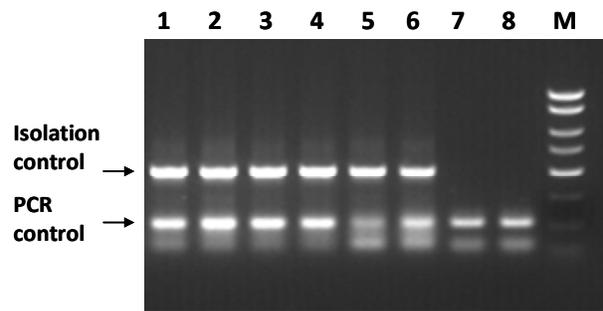


Figure 2: Detection of Isolation and PCR Control. A representative 1X TAE 1.5% agarose gel showing the amplification of **Isolation Control** and **PCR Control** under different conditions using the **Control 2X RT-PCR Mastermix**. The size of the Isolation Control amplicon and PCR Control amplicon correspond 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.

PSTVd RT-PCR Detection Kit Contents:

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

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 PSTVd 2x RT-PCR Master Mix, Control 2X RT-PCR Master Mix, PSTVd Positive Control (PosC) and the 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
38600	Potato Spindle Tuber Viroid (PSTVd) RT-PCR Detection Kit	24 tests