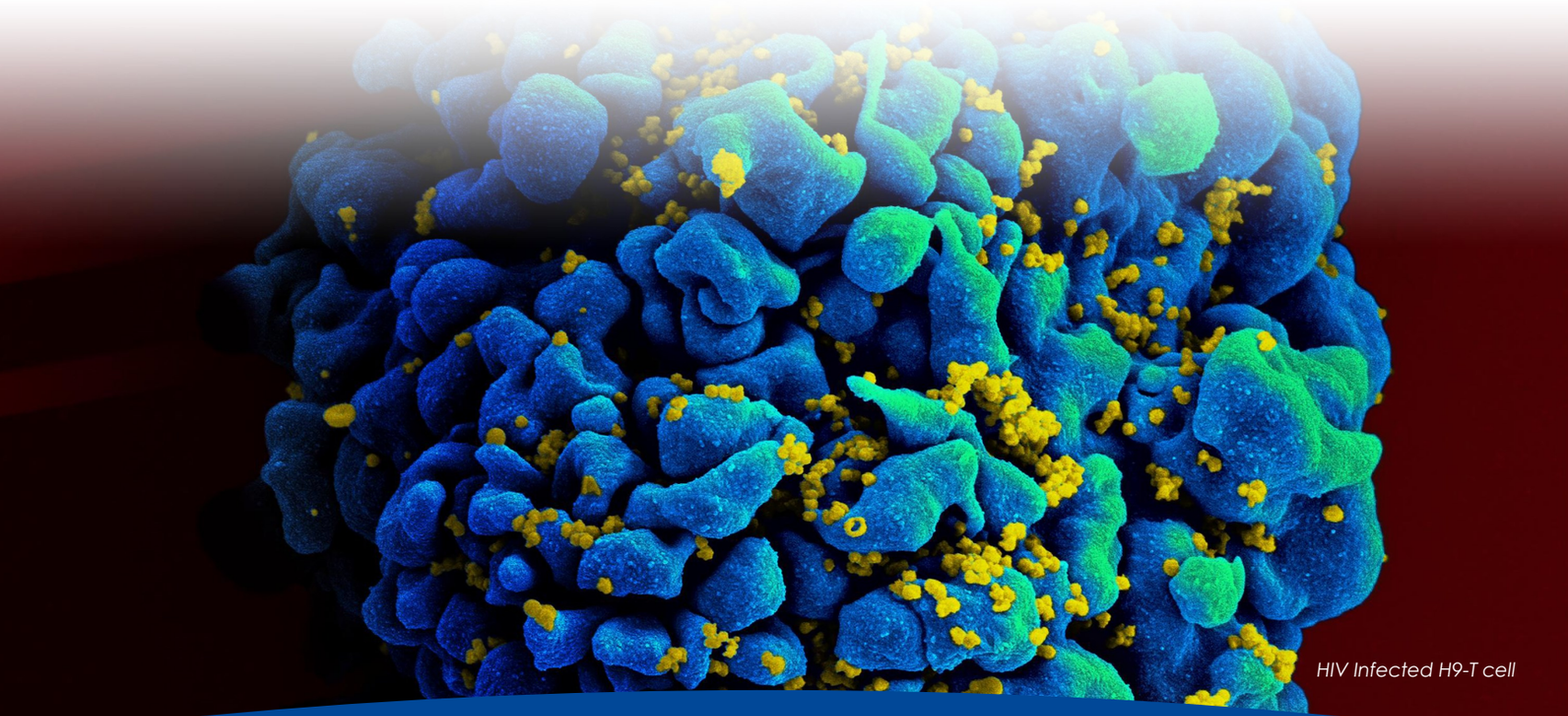
NORGEN BIOTEK CORP.

HIV & HIV ASSOCIATED PATHOGEN DETECTION



HIV Infected H9-T cell

www.norgenbiotek.com

ISO 9001:2008

ISO 13485:2003

ISO 15189:2012

CE

For research use only and NOT intended for in vitro diagnostics

HIV Quantitative RT-PCR Detection Kit

Cat. # 33740

A ready-to-use system for the isolation and detection of HIV using end-point RT-PCR

Norgen's HIV Quantitative RT-PCR Kit is a research use-only diagnostic test for the detection of HIV-specific RNA transcripts. The kit could be used for quantification of HIV RNA using end-point RT-PCR (gel electrophoresis-based) with the primer set and the master mix provided with the kit. A 142 nt region of the HIV RNA genome is amplified. In addition, the kit contains a quantified Positive Control (PosC, 20,000 copies per µL) that can be used for construction of a dilution series for HIV RNA quantification. Alternatively, the kit could be used for real-time detection of HIV RNA level by coupling the primer set of the kit with a SYBR Green I-spiked RT-PCR master mix.

Features and Benefits

- Contains a ready-to-use Primer Set and 2X PCR Master Mix
- High sensitivity and specificity
- Primer set and controls also available separately

Linear Range

- The linear range (analytical measurement) of Norgen's HIV Quantitative RT-PCR Kit was determined by analyzing a dilution series of a HIV quantification standard ranging from 1 x 10^7 copies/µL to 1 x 10^{-1} copies/µL.
- Each dilution has been tested in replicates (n = 4) using Norgen's HIV Quantitative RT-PCR Kit on 1X TAE 1.7% agarose gel.
- The linear range of Norgen's HIV Quantitative RT-PCR Kit has been determined to cover concentrations from 1 x 10^2 copies/µL to at least 1 x 10^6 copies/µL of isolated RNA

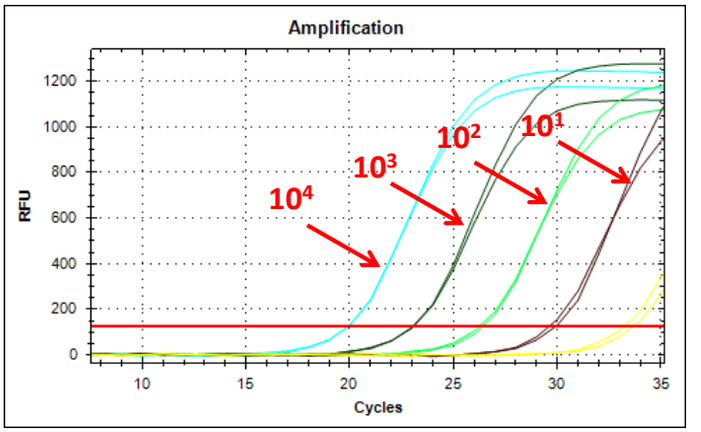


Figure 1. Sensitivity of Detection using the HIV Quantitative RT-PCR Detection Kit. A representative RT-qPCR Baseline Graph showing the amplification of HIV RNA at different concentrations.

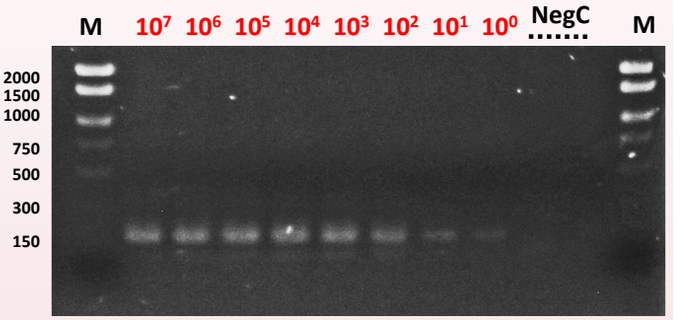


Figure 2. Sensitivity of Detection using the HIV Quantitative RT-PCR Detection Kit. A representative 1X TAE, 2 % agarose gel showing the amplification of HIV RNA at different concentrations. The size of the HIV target amplicon corresponds to the 142 bp band represented by the provided DNA Marker (M). NegC = Negative Control.

Ordering information

Description	Cat #	Size
HIV Quantitative RT-PCR	33740	48 rxns

For research use only and NOT intended for in vitro diagnostics

HIV Proviral DNA PCR Detection Kit

Cat. # 33840

A ready-to-use system for the isolation and detection of HIV Proviral DNA using end-point RT-PCR

Norgen's HIV Proviral DNA PCR Kit is a research use-only diagnostic test, based on the use of end-point PCR technology, for the detection of HIV proviral DNA. The kit includes Master Mix and primers for the specific amplification of a 142 bp region of the HIV proviral DNA. In addition, the kit contains a positive and a negative control to confirm the integrity of the kit reagents.
The detection of HIV proviral DNA is based on end-point PCR technology, utilizing polymerase chain reaction (PCR) for the amplification of specific HIV proviral DNA sequences. For analysis of the PCR data, the PCR reaction is loaded on an agarose DNA gel along with the provided DNA marker for qualitative analysis.

Features and Benefits

- Contains a ready-to-use Primer Set and 2X PCR Master Mix
- High sensitivity and specificity
- Primer set and controls also available separately

Linear Range

- The linear range (analytical measurement) of Norgen's HIV Proviral DNA PCR Kit was determined by analyzing a dilution series of an HIV proviral DNA quantification standard ranging from 1 x 10^7 copies/µL to 1 x 10^{-1} copies/µL.
- Each dilution has been tested in replicates (n = 4) using Norgen's HIV Proviral DNA PCR Kit on 1X TAE 1.7% agarose gel.
- The linear range of Norgen's HIV Proviral DNA PCR Kit PCR Kit has been determined to cover concentrations from 1 x 10^2 copies/µL to at least 1 x 10^6 copies/µL of isolated DNA

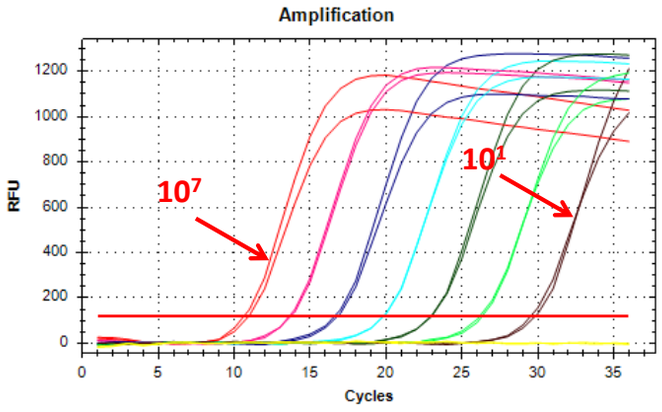


Figure 1. Sensitivity of Detection using the HIV Proviral DNA Detection Kit. A representative qPCR Baseline Graph showing the amplification of HIV Proviral DNA at different concentrations (10-fold dilution series from 10^7 copies down to 10^1 copies).

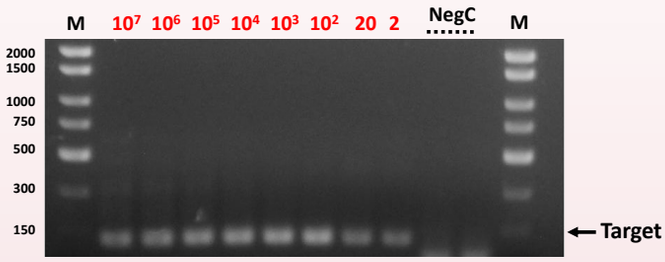


Figure 2. Sensitivity of Detection using the HIV Proviral DNA PCR Kit. A representative 1X TAE, 2 % agarose gel showing the amplification of HIV Proviral DNA at different concentrations. The size of the HIV target amplicon corresponds to the 142 bp band represented by the provided DNA Marker (M). NegC = Negative Control.

HIV Proviral DNA Ordering information

Description	Cat #	Size
End-Point PCR	33840	48 rxns
Real-Time PCR	TM33840	48 rxns
Real-Time PCR	SG33840	48 rxns

For research use only and NOT intended for in vitro diagnostics

Plasma/Serum HIV RT-PCR Detection Kit

Cat. # 33800

A ready-to-use system for the isolation and detection of HIV from plasma/serum using end-point RT-PCR

Norgen's Plasma/Serum HIV RT-PCR Detection Kit is a ready-to-use system for the isolation and detection of human immunodeficiency virus (HIV). First, the kit contains components for the rapid isolation of total RNA, including viral RNA, from the plasma/serum samples using spin-column chromatography based on Norgen's proprietary resin. Second, the kit contains HIV Master Mix and controls to allow for RT-PCR amplification, as well as a Control PCR Master Mix to allow for amplification of both an Isolation Control and a PCR Control. The amplified PCR products are then detected using agarose gel electrophoresis. Alternatively, detection can be performed based on real-time RT-PCR using melt curves.

The HIV Master Mix contains reagents and enzymes for the specific amplification of a 297 bp region of HIV. In addition, Norgen's Plasma/Serum HIV RT-PCR Detection Kit contains a second Master Mix, the Control 2x RT-PCR Master Mix, which can be used to identify possible PCR inhibition and/or inadequate isolation via a separate PCR reaction with the use of the provided PCR Control (PCRC) or Isolation Control (IsoC). The kit is designed to allow for the testing of 24 samples. The HIV RT-PCR Primer Set and Controls are also available separately for end-point RT-PCR detection.

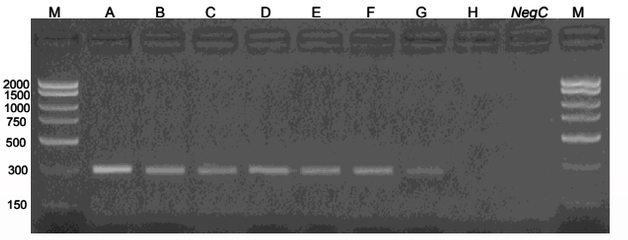


Figure 1. Detection of HIV using the Plasma-Serum HIV RT-PCR Detection Kit. A representative 1X TAE, 1.7% agarose gel showing the amplification of HIV at different concentrations (Target). The size of the HIV target amplicon corresponds to the 297 bp band represented by the provided DNA Marker (M). Lanes A-H represents samples spiked with different HIV concentrations isolated from 2mL plasma samples (interpreted as positive results). The HIV spiked in plasma samples is an in vitro transcribed HIV RNA fragments.

Features and Benefits

- Rapid isolation of high quality RNA from plasma/serum
- Contains two ready-to-use 2X PCR Master Mixes
- High sensitivity and specificity
- Includes an isolation control and a PCR control
- Primer set and controls also available separately

Linear Range

- The linear range of Norgen's Plasma/Serum HIV RT-PCR Detection Kit was determined by analyzing a dilution series of HIV quantitative standards ranging from 8.46 x 10^9 VP/µl to 1 x 10^{-1} IU/µl.
- Each dilution has been tested in replicates (n = 4) using Norgen's Plasma/Serum HIV RT-PCR Detection Kit on 1.7X TAE, 1.7% Agarose gels.
- The linear range of Norgen's Plasma/Serum HIV RT-PCR Detection Kit has been determined to cover concentrations from 10 VP/µl to at least 8 x 10^6 VP/µl
- Under the conditions of Norgen's Plasma/Serum circulating RNA Isolation procedure, Norgen's Plasma/Serum HIV RT-PCR detection Kit covers a linear range from 1000 VP/mL Plasma/Serum to at least 8 x 10^9 VP/mL Plasma/Serum

Plasma/Serum HIV Ordering information

Description	Cat #	Size
RT-PCR Detection Kit	33800	24 rxns
Real-Time PCR	TM33800	48 rxns
Real-Time PCR	SG33800	48 rxns
Primer Sets and Controls	33810	100 rxns

For research use only and NOT intended for in vitro diagnostics

Urine-Based HIV RT-PCR Detection Kit — Cat. # 33700

A ready-to-use system for the isolation and detection of HIV from urine using end-point RT-PCR

Norgen's Urine-Based HIV RT-PCR Detection Kit is a ready-to-use system for the isolation and detection of Human immunodeficiency virus (HIV) from urine. First, the kit contains components for the rapid isolation of total RNA, including viral RNA, from the urine samples using spin-column chromatography based on Norgen's proprietary resin. Second, the kit contains HIV Master Mix and controls to allow for PCR amplification. The amplified PCR products are then detected using agarose gel electrophoresis. Alternatively, detection can be performed based on real-time RT-PCR using melt curves (Detection). Please see the flowchart to the right.
The HIV Master Mix contains reagents and enzymes for the specific amplification of a 297 bp region of HIV. In addition, Norgen's Urine-Based HIV RT-PCR Detection Kit contains a second heterologous amplification system to identify possible PCR inhibition and/or inadequate isolation. The kit is designed to allow for the testing of 24 samples. The HIV RT-PCR Primer Set and Controls are also available separately for end-point RT- PCR detection.

Features and Benefits

- Rapid isolation of high quality RNA from urine
- Contains a ready-to-use 2X PCR Master Mix
- High sensitivity and specificity
- Includes an isolation control and a PCR control
- Primer set and controls also available separately

Linear Range

- The linear range of Norgen's Urine-Based HIV RT-PCR Detection Kit was determined by analyzing a dilution series of HIV quantitative standard ranging from 8.46 x 10^9 VP/µL to 1 x 10^{-1} IU/µL.
- Each dilution has been tested in replicates (n = 4) using Norgen's Urine-Based HIV RT-PCR Detection Kit on 1.7X TAE, 1.7% Agarose gels.
- The linear range of Norgen's Urine-Based HIV RT-PCR Detection Kit has been determined to cover concentrations from 10 VP/µl to at least 8 x 10^6 VP/µl
- Under the conditions of Norgen's Urine RNA Isolation procedure, Norgen's Urine-Based HIV RT-PCR detection Kit covers a linear range from 1000 VP/mL urine to at least 8 x 10^9 VP/mL urine.

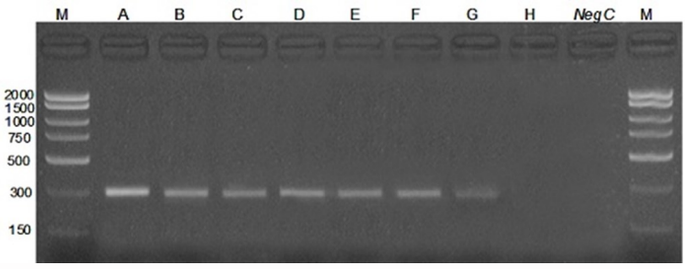


Figure 1. Detection of HIV using the Urine-Based HIV RT-PCR Detection Kit. A representative 1X TAE, 1.7% agarose gel showing the amplification of HIV at different concentrations. The size of the HIV target amplicon corresponds to the 284 bp band represented by the provided DNA Marker (M).

Urine-Based HIV Ordering information

Description	Cat #	Size
RT-PCR	33700	24 rxns
Real-Time PCR	TM33700	48 rxns
Real-Time PCR	SG33700	48 rxns
Primer Sets and Controls	33710	100 rxns

For research use only and NOT intended for in vitro diagnostics

Cryptococcus neoformans PCR Kit — Cat. # 42720

A ready-to-use system for the isolation and detection of Cryptococcus neoformans using end-point PCR

Cryptococcus neoformans is an encapsulated yeast. Infection with *C. neoformans*is known as cryptococcosis and is the cause of the most common life-threatening meningitis in patients with weakened immune systems, particularly in advanced HIV/AIDS.
Norgen's *Cryptococcus neoformans* PCR Kit is a research use-only kit, based on the use of end-point PCR technology, for the detection of *Cryptococcus neoformans* specific DNA. The kit includes Master Mix and primers for the specific amplification of a 278 bp region of the *Cryptococcus neoformans* genome. In addition, the kit contains a positive and a negative control to confirm the integrity of the kit reagents. The detection of *Cryptococcus neoformans* specific DNA is based on end-point PCR technology, utilizing polymerase chain reaction (PCR) for the amplification of specific *Cryptococcus neoformans* DNA sequences. For analysis of the PCR data, the PCR reaction is loaded on an agarose DNA gel along with the provided DNA ladder for qualitative analysis.

Features and Benefits

- Contains a ready-to-use Primer Set and 2X PCR Master Mix
- Could be coupled with a Norgen DNA Isolation Kit
- High sensitivity and specificityPrimer set and controls also available separately

Linear Range

- The linear range (analytical measurement) of Norgen's *Cryptococcus neoformans* PCR Kit was determined by analyzing a dilution series of a *C. neoformans* quantification standard ranging from 1 x 10^7 copies/µL to 1 x 10^{-1} copies/µL.
- Each dilution has been tested in replicates (n = 4) using Norgen's *Cryptococcus neoformans* PCR Kit on 1X TAE 1.7% agarose gel.
- The linear range of Norgen's *Cryptococcus neoformans* PCR Kit has been determined to cover concentrations from 1 x 10^2 copies/µL to at least 1 x 10^6 copies/µL of isolated DNA

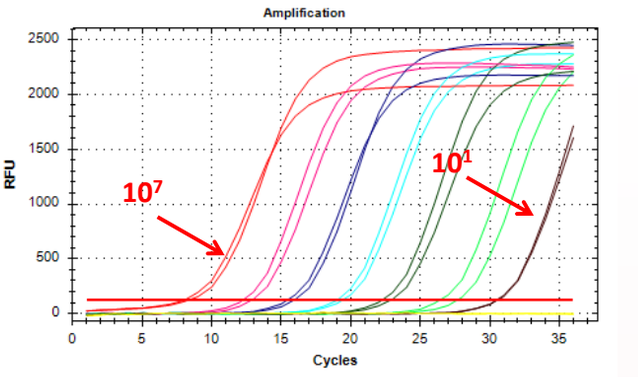


Figure 1. Sensitivity of Detection using the *Cryptococcus neoformans* PCR Kit Dx. A representative qPCR Baseline Graph showing the amplification of *Cryptococcus neoformans* DNA at different concentrations (10-fold dilution series from 10^7 copies down to 10^1 copies).

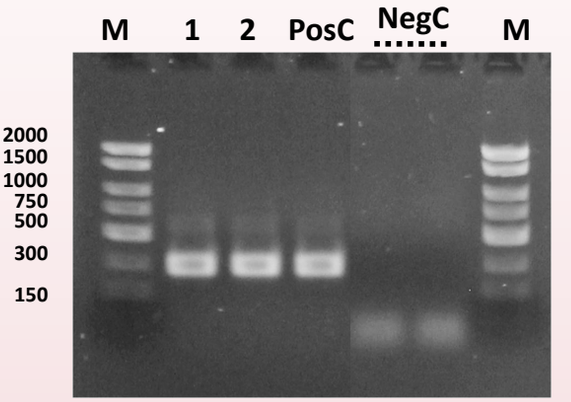


Figure 2. A representative 1X TAE 2% agarose gel showing the amplification of *Cryptococcus neoformans*. The size of the *Cryptococcus neoformans* target amplicon corresponds to the 278 bp band represented by the provided DNA Marker (M). No amplification of the target is observed with the Negative Control.

***Cryptococcus neoformans* Ordering information**

Description	Cat #	Size
End-Point PCR	42720	48 rxns
Real-Time PCR	TM42720	48 rxns
Real-Time PCR	SG42720	48 rxns

For research use only and NOT intended for in vitro diagnostics

Pneumocystis jirovecii PCR Kit — Cat. # 42820

A ready-to-use system for the isolation and detection of Pneumocystis jirovecii using end-point PCR

Pneumocystis jirovecii is a yeast-like fungus that causes *Pneumocystis jirovecii* Pneumonia (originally known as *Pneumocystis carinii* Pneumonia or PCP). PCP is the most common opportunistic infection in patients with HIV/AIDS.

Norgen's *Pneumocystis jirovecii* PCR Kit is a research use-only kit, based on the use of end-point PCR technology, for the detection of *Pneumocystis jirovecii* specific DNA. The kit includes Master Mix and primers for the specific amplification of a 238 bp region of the *Pneumocystis jirovecii* genome. In addition, the kit contains a positive and a negative control to confirm the integrity of the kit reagents. The detection of *Pneumocystis jirovecii* specific DNA is based on end-point PCR technology, utilizing polymerase chain reaction (PCR) for the amplification of specific *Pneumocystis jirovecii* DNA sequences. For analysis of the PCR data, the PCR reaction is loaded on an agarose DNA gel along with the provided DNA ladder for qualitative analysis.

Features and Benefits

- Contains a ready-to-use Primer Set and 2X PCR Master Mix
- Could be coupled with a Norgen DNA Isolation Kit
- High sensitivity and specificity
- Primer set and controls also available separately

Linear Range

- The linear range (analytical measurement) of Norgen's *Pneumocystis jirovecii* PCR Kit was determined by analyzing a dilution series of a *P. jirovecii* quantification standard ranging from 1 x 10^7 copies/µL to 1 x 10^{-1} copies/µL.
- Each dilution has been tested in replicates (n = 4) using Norgen's *Pneumocystis jirovecii* PCR Kit on 1X TAE 1.7% agarose gel.
- The linear range of Norgen's *Pneumocystis jirovecii* PCR Kit has been determined to cover concentrations from 1 x 10^2 copies/µL to at least 1 x 10^6copies/µL of isolated DNA

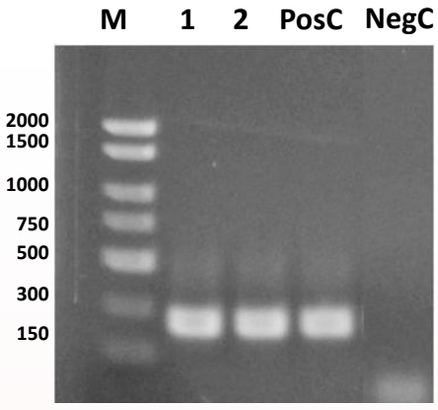


Figure 1. A representative 1X TAE 2% agarose gel showing the amplification of Pneumocystis jirovecii. The size of the Pneumocystis jirovecii target amplicon corresponds to the 238 bp band represented by the provided DNA Marker (M). No amplification of the target is observed with the Negative Control.

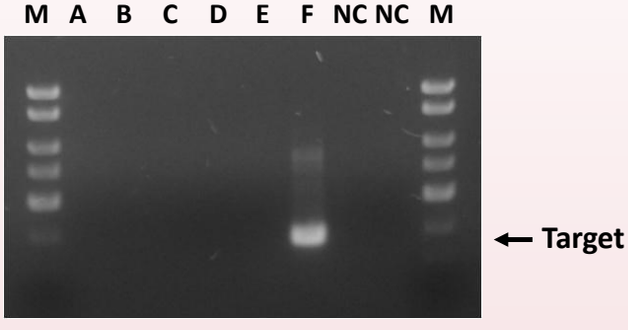


Figure 2. Specificity of the Primers used to Detect *Pneumocystis jirovecii*. A 1.7 % agarose gel is shown which indicates the specificity of the *Pneumocystis jirovecii* PCR Kit Dx. The specificity of the *Pneumocystis jirovecii* PCR Kit Dx is first and foremost ensured by the selection of the *Pneumocystis jirovecii* -specific primers, as well as the selection of stringent reaction conditions. The primers were checked for possible homologies in GenBank published sequences by sequence comparison analyses. Lane A represents a fragment of Norovirus. Lane B corresponds to a fragment of West Nile Virus. Lanes C corresponds to a fragment of Influenza A (H5). Lane D corresponds to*Neisseria gonorrhoeae* genomic DNA. Lanes E corresponds to Chlamydia trachomatis genomic DNA. No cross-reactivity of the target primers was found for any of the tested RNA/DNA as well as the Negative Control (NC). The size of the *Pneumocystis jirovecii*target amplicon corresponds to the 238 bp band as depicted by Lane F and represented by the provided DNA Marker (M).

Pneumocystis jirovecii Ordering information

Description	Cat #	Size
End-Point PCR	42820	48 rxns
Real-Time PCR	TM42820	48 rxns
Real-Time PCR	SG42820	48 rxns

Commitment to Quality

NORGEN BIOTEK CORP.

3430 Schmon Parkway, Thorold, ON L2V 4Y6 Canada
Phone: (905) 227-8848
Toll Free: 1-866-NORGENB (667-4362)
Fax: (905) 227-1061
Email: info@norgenbiotek.com

www.norgenbiotek.com

An ISO 13485:2003, ISO 9001:2008 & ISO 15189:2012 Certified Company