MBPCR106 Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit

Description

Hepatitis C is a blood-borne viral infection that is caused by Hepatitis C Virus (HCV), a hepatotropic RNA virus, with a propensity to affect the liver. It is responsible for chronic liver disease and a variety of extrahepatic manifestations, hence recognized as a major public health problem worldwide. HCV is primarily transmitted via the parenteral route which includes injection drug use, blood transfusion, unsafe injection practices, and other healthcare related procedures. HCV causes acute subclinical hepatitis which gradually evolves into chronic hepatitis in about 80% of the infected cases. For long, hepatitis C remained obscure to researchers due to its clinically silent nature. Most patients with acute infection are symptom free and only a small proportion develops jaundice. Chronic HCV infection may be associated with vague, non-specific symptoms such as fatigue, joint pain, and discomfort in the right-upper quadrant of the abdomen. Patients usually become symptomatic when complications of chronic liver disease or extra-hepatic manifestations develop. Hence, early diagnosis and treatment of HCV is important which can also contribute to reducing Hepatitis transmission.

NOTE: Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is for *in vitro* use only.

Intended Use

Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is intended for use by qualified clinical laboratory personnel trained in the techniques of real-time PCR and *in vitro* diagnostic procedures. The kit is recommended for sensitive and specific detection of HCV RNA in human plasma samples. Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit targets 100% of the known HCV genotypes (HCV genotype 1-7).

Product Description

Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is based on real-time PCR technology for the detection of Hepatitis C Virus (HCV) specific RNA encompassing all major HCV genotypes (HCV genotype 1-7). The kit contains primer-probe mixture specific for detection of HCV RNA. In addition, the kit contains an internal control gene to identify the RNA extraction efficiency and to ensure successful PCR reaction. The kits also provide positive control for the validity of the kit. The assay principle is based on hydrolysis probe chemistry which confers higher specificity and sensitivity.

Positive control

This is a control reaction used to test for the presence of inhibitors in the sample or the efficiency of the polymerase chain reaction itself using a pre-dispensed nucleic acid sequence and the primer set that detects it. It is usually used to ensure proper and intended functioning of all the reagents and is recommended to be used in every run to assess optimal performance.

Endogenous Internal control

This is a control sequence which is amplified in the same reaction tube along with the target sequence (target pathogen) but detected with a different primer (i.e. Multiplex PCR). An internal control is often used to detect the failure of amplification in cases where the target sequence is not amplified.

ISO 9001-2015 CERTIFIED
WHO GMP CERTIFIED
ISO 13485-2016 CERTIFIED

Registered Office
HiMedia Laboratories Pvt Ltd.
Plot No. C-40, Road No. 21Y, MIDC, Wagle Industrial Estate, Thane, (West) 400604, Maharashtra, INDIA.
Customer Care No.: 00-91-22-6116 9797
Tel : 00-91-22-6147 1919, 6903 4800
Fax : 6147 1920
Web : www.himedialabs.com
Email : info@himedialabs.com
mb@himedialabs.com

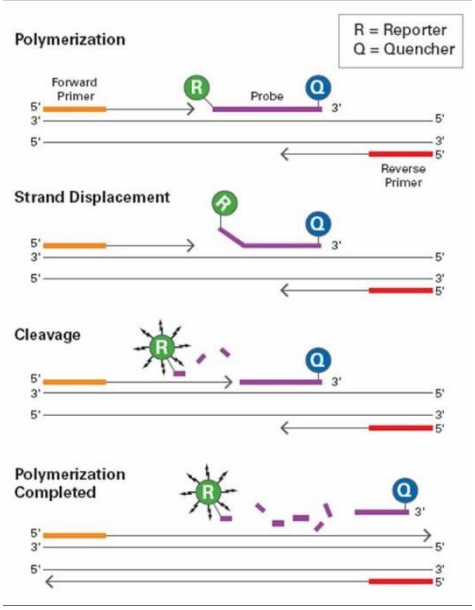
Negative Template Control

A negative template control is needed to ensure that the reagents, equipment, and environment used in the assay are not contaminated with target RNA. In this reaction, Nuclease free water is used as the template. It is recommended to have a minimum of one reaction of negative control per run.

Principle

Real-time polymerase chain reaction, also called quantitative Polymerase Chain Reaction (qPCR) or kinetic Polymerase Chain Reaction, is a laboratory technique based on the principle of PCR. This technique is used to amplify a targeted cDNA sequence by use of hydrolysis probes that are short oligonucleotides that have a fluorescent reporter dye attached to the 5' end and a quencher dye to the 3' end. Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is designed to specifically detect HCV in the FAM channel with Internal Control (IC) in ROX channel.

Diagrammatic representation of preferential binding of probe specific to DNA fragments in Real-time PCR



Polymerization: A fluorescent reporter (R) dye and a quencher (Q) are attached to the 5' and 3' end of the probe respectively

Strand displacement: When the probe is intact, the reporter dye emission is quenched.

Cleavage: During each extension cycle, the DNA polymerase cleaves the reporter dye from the probe

Polymerization completed: Once separated from the quencher, the reporter dye emits its characteristic fluorescence

While the probe is intact, the proximity of the quencher dye greatly reduces the fluorescence emitted by the reporter dye by fluorescence resonance energy transfer (FRET). The probes are designed such that they anneal within a DNA region amplified by a specific set of primers. During PCR amplification, these probes will hybridize to the target sequences located in the amplicon i.e. the DNA. As the *Taq* DNA polymerase replicates the template with the bound probe, the 5'- nuclease activity of the polymerase enzyme cleaves the fluorescent probe. This results in the separation of the reporter dye from the quencher dye and increasing the reporter dye signal. As the probe is removed from the target strand, primer extension continues to the end of the template strand. Hence, fluorescence detected in the quantitative PCR thermal cycler is directly proportional to the fluorophore released and the amount of DNA template present in the PCR. Thus, inclusion of the probe does not inhibit the overall PCR process.

Molecular Features

- Detection of HCV genotypes 1 to 7.
- Highly sensitive and specific.

Technology features:

- Fast and reliable results within 2hrs and 30 minutes.
- One-step assay i.e. reverse transcription and amplification are performed in same tube.
- Includes all reagents & controls for validity of the test.
- Open system – Compatible with 4-channel and 5-channel qPCR cyclers.
- Wet-lab assays validated on the Bio-Rad CFX Opus 96, Applied Biosystems QuantStudio 5 and Insta Q96® Plus Real Time PCR Systems.

Types of Specimens and storage:
The internal validation of the Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit was performed using RNA extracted from human EDTA plasma samples. Other sample materials are not validated. Therefore, we recommend the use of EDTA plasma sample for detection of HCV. The RNA should be extracted using a standard viral RNA extraction kit. After collection, whole blood must be transported at 2-25°C and processed within 6 hours of collection. Separated plasma can be refrigerated (2–8°C) for up to 48-72 hours. Plasma specimens stored beyond these time points must be frozen at or below -20 °C. Frozen specimens should undergo no more than three freeze-thaw cycles. After extraction, store the extracted RNA samples at -20°C for short period storage and -70°C or -80°C for long period storage.

Specimen Handling
Follow appropriate techniques for handling specimens; after use, contaminated materials must be sterilized by autoclaving before discarding. Standard precautions as per established guidelines should be followed while handling clinical specimens and items contaminated with other body fluids. Safety guidelines may be referred to in individual safety data sheets.

Storage and Shelf life
The provided kit has a shelf-life of 12 months when stored between -10°C to -20°C. Repeated thawing and freezing of PCR reagents (> 10 freeze and thaw cycle) should be avoided, as this may reduce the sensitivity of the assay. If the reagents are to be used multiple times, we recommend storing reagents as aliquots to avoid repeated freeze and thaw. Degradation of sample RNA specimens can also reduce the sensitivity of the assay. HiMedia Laboratories does not recommend using the kit after the expiry date stated on the pack.

Kit Contents: The provided PCR kit contains:

Components	Product code	Reagents provided for * (µL)		
		25R	50R	100R
HCV Master Mix	DS1692	108	216	424
HCV Primer-Probe Mix	DS1182	27	54	106
Molecular Biology Grade Water	ML065	81	162	318
HCV Positive Control Mix	DS1754	81	162	318

* For a 20 µL PCR reaction

Materials needed but not provided
- Appropriate real-time PCR instrument.
- Appropriate nucleic acid extraction system or kit.
- Centrifuge with a rotor for 1.5ml - 2 ml reaction tubes.
- Centrifuge with a rotor for microtiter plates, if using 96 well reaction plates.
- Vortex mixer.
- PCR tubes (0.1ml or 0.2ml) or 96 well reaction plates with corresponding (optical) closing material or lid.
- Pipettes (Capacity: 0.5 - 10 µL/10 - 100 µL/20 - 200 µL/100 - 1000 µL).
- Pipette tips with filters (As per pipette capacity).
- Powder-free gloves (disposable).

All materials are available through www.himedialabs.com

Product name	Product Code
Real-Time PCR Instrument and equipment	
Insta Q96®AG Real time PCR System, 96 well block, 5 channels	MBLA027
Insta Q96®AG 6.0 Real time PCR System, 96 well block, 6 channels	MBLA028
Insta Q96® Plus Real time PCR System, 96 well block, 5 channels	LA1073
Insta Q96® - 6.0 Real time PCR System, 96 well block, 6 channels	LA1074

Insta Q96® Real time PCR System, 96 well block, 5 channels	LA1012
Insta Q48® M4 Real time PCR System, 96 well block, 4 channels	LA1023
Insta Q48® M2 Real time PCR System, 96 well block, 2 channels	LA1024
TabSpin™ Microcentrifuge	LA1089/LA1090
HiPer® Mini Plate Centrifuge	LA1099
Automated nucleic acid extraction system and materials	
Insta NX® Mag16, Insta NX® Mag16^{Plus}	LA1118, MBLA018
Insta NX® Mag32, Insta NX® Mag32^{Plus}	LA1096, MBLA019
Insta NX® Mag96, Insta NX® Mag96^{plus}	LA1097, MBLA026
Extraction Kits	
HiPurA® Pre-filled Cartridges for Viral Nucleic Acid Purification	MB582PC16
HiPurA® Pre-filled Plates for Viral Nucleic Acid Purification	MB582MPF16
HiPurA® Pre-filled Plates for Viral Nucleic Acid Purification [For Insta NX® Mag32]	MB582MPF-32
HiPurA® Prefilled Plates for Viral Nucleic Acid Purification [For Insta NX® Mag96]	MB582MPF-96
HiPurA® Viral DNA/RNA Purification Kit	MB582
HiPurA® Viral RNA Purification Kit	MB615
Tubes, plates, and other consumables	
Varivol II Micropipettes (Capacity: 0.5 to 10 µL/10 to 100 µL/200 to 1000 µL)	LA611/LA614/LA615
µPet Autoclavable Micropipettes (Capacity: 0.5 - 10 µL/10 - 100 µL/20 - 200 µL/100 - 1000 µL)	LA955/LA958/LA959/LA960
Q4Pet Autoclavable Micropipette (Capacity: 0.5 to 10 µL/10 to 100 µL/100 - 1000 µL)	MBLA009/MBLA011/MBLA008
Barrier Tips, Maximum capacity 10 µL	LA749A
Barrier Tips,100µl Max capacity 100 µL	LA1104A
Barrier Tips, Maximum capacity 200 µL	LA751A
Barrier Tips, Maximum capacity 1000 µL	LA859A
8-strip tubes & optically clear flat caps for PCR	PR17, PR22, PR23
PCR Tubes, 0.1 mL, 0.2 mL; PCR Plates	PW1255/PR2/PR3/PR19
Optical Sealing film	PR18
1.5 ml nuclease free Micro centrifuge tubes	PW146

Kit compatibility with Real-Time PCR Systems

Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit contains fluorophores that are compatible to the following PCR systems:

Real-Time PCR system	Company	Dye 1 (HCV)	Dye 2 (IC)
Insta Q96®AG/ Insta Q96®AG 6.0/Insta Q96® - 6.0/Insta Q96® Plus/Insta Q48® M4	HiMedia Laboratories Pvt. Ltd.	FAM	ROX
QuantStudio™ 3 and 5	Applied Biosystems	FAM	ROX
Applied Biosystems 7500	Applied Biosystems	FAM	ROX
BioRad CFX Opus 96/CFX96	Bio-Rad Laboratories, Inc.	FAM	ROX
Rotor-Gene® Q/QIAquant	QIAGEN	Green	Orange
Roche LightCycler® 96	Roche	FAM	ROX
AriaMx	Agilent	FAM	ROX
Alta RT-96/48	Athenese-Dx Private Limited	FAM	ROX
qTOWER^3 auto	Analytik Jena	FAM	ROX

Note: Ensure that the Real-Time PCR system is calibrated for dyes and is maintained according to the manufactureŕs instructions and recommendations

General Preparation Instructions

- Before use all PCR components should be completely thawed on ice (4°C).
- Perform the amplification reactions in a clean area, preferably in a biosafety cabinet.
- Use of aerosol barrier pipette tips is recommended to reduce contamination risks from extraneous RNA templates.
- Extract and store positive control sample (if used) separately from all other reagents to avoid contamination and add it to the reaction mix in a separate area.
- Clear surfaces and working areas with RNase Kil™ (ML162)

Protocol for PCR Reaction Mix Preparation

1. In the "Master mix Preparation" area, thaw all components from the kit on ice, mix by inverting the tubes and centrifuge the reagents for 5 seconds. Keep on ice for later use.
2. Based on the number of specimens to be tested (N), calculate the volume of the components to be added as N X (volume of "1X")
3. Use 1.5 mL Nuclease free centrifuge tube(s) for the preparation of the PCR reaction mix. Refer the following table. After all the reagents are added, mix them thoroughly and centrifuge for 5 seconds.

Components	Product code	Volume for "1X" (One Reaction)
Preparation of PCR Reaction Mix		
HCV Master Mix	DS1692	4 µL
HCV Primer-Probe Mix	DS1182	1 µL
Total PCR Reaction Mix	**-**	**5 µL**
Template addition		
Template/ Purified Viral RNA	**-**	15 µL
Total reaction volume	**-**	**20 µL**

4. Aliquot 5 µL of PCR reaction mix into respective labeled 0.1/0.2mL PCR tube/plate/strips, compatible to the PCR instrument to be used.
5. In the "Nucleic acid handling" area, add 15 µL of extracted RNA of test specimen into the plate/strip to respective wells.
6. For positive and no template control, template Viral RNA is replaced by Positive control for positive control reaction and by nuclease free water for no template control reaction. Refer the following table.

Set up of controls for the PCR run			
Components	**Product code**	**Volume for "1X" (One Reaction)**	
		Positive Control	**No Template Control**
Total PCR Reaction Mix		5 µL	5 µL
HCV Positive Control Mix	DS1754	15 µL	-
Molecular Biology Grade water for PCR	ML065	**-**	15 µL
Total reaction volume	**-**	**20 µL**	**20 µL**

7. Tightly cap the tubes/strips or seal the plate using an optically clear adhesive film.
8. Centrifuge the tube briefly at 6000 rpm for about 10 seconds.
9. Place the tubes in Real-time PCR machine and set the recommended PCR program (mentioned below). Interpret the data from the amplification plot (observe the Ct values).

Recommended PCR program

Step	Temperature	Time	Sampling	Cycles
1	55°C	15 minutes	---	1
2	95°C	30 seconds	---	1
3	95°C	10 seconds	---	50
4	55°C	1 minute 5 seconds	Yes	
5	72°C	30 seconds	---	

Selection of channel

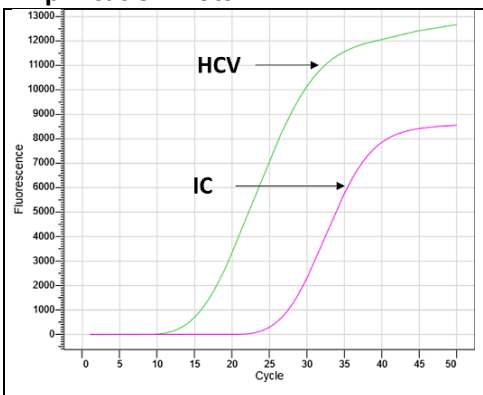
Target	Dye	Quencher[#]
HCV	FAM	None
IC	ROX/Texas Red	None

[$]**Passive Reference Dye:** Select "None"
([#], [$]Thermo Fisher's QuantStudio™ 5 Real-Time PCR System)

Data Analysis
The following conditions should be met for a valid diagnostic test:

Control	Detection channel	
	FAM (HCV)	ROX (Internal Control)
HCV Positive Control	+	+
Negative Template Control	-	-

Amplification Plots



Sr. No.	Sample	Ct Values	
		Positive Control	Internal Control
1.	Hepatitis C Virus (HCV)	15.94	26.76
2.	No template control (NTC)	-	-

Image representing amplification plot of the Hepatitis C Virus (HCV) and internal control (IC) gene with Ct values using Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit on InstaQ 96 series of instrument (Ct values provided in table are for representation only).

Data Interpretation:
Interpret the results of the specimen as follows:

Detection Channel		Result Interpretation
FAM (HCV)	ROX (Internal Control)	
+ (Ct cut off ≤ 40)	+/-*	HCV Specific RNA detected
-	+	HCV specific RNA is not detected. Sample does not

		contain detectable amounts of HCV specific RNA.
-	-	PCR Inhibition or reagent failure. Retest the sample.

*Detection of the IC in the ROX channel is not required for the positive results in the FAM channel. Presence of high HCV RNA load and/or PCR inhibitors in the original sample can lead to reduced or absence of internal control signal.

Performance Characteristics

Analytical sensitivity

Limit of detection (LOD)

The analytical sensitivity or the Limit of Detection (LOD) of Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is defined as the concentration of HCV RNA molecules that can be detected with a positivity rate of ≥ 95%. The analytical sensitivity for Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit was conducted using synthetic HCV nucleic acid. The preliminary LoD was determined by testing a 10-fold dilution series in triplicates per concentration and then confirmed with 20 replicates of the concentration determined to be the detectable LoD. The data revealed that the Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit detects ≈1 copy/µL. Thus, the detectable Limit of Detection (LoD) was determined to be ≈1 copy/µL. The sensitivity analysis of the Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit was carried out on HiMedia's InstaQ 96 series, Biorad's CFX Series and Thermo Fisher's QuantStudio™ 5 Real-Time PCR System.

Analytical Specificity

Inclusivity – In silico

The analytical specificity of the Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit was ensured by performing *in silico* analysis of the HCV primers and probes using NCBI BLAST and optimizing the stringent PCR conditions. The detectability of all the relevant HCV subtypes and genotypes was ensured by analyzing the HCV primer-probes for sequence homology to the sequences available in the HCV database (https://hcv.lanl.gov/content/index) using multiple sequence alignment tools.

Analytical Reactivity

The analytical reactivity of the Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit was verified by wet lab testing of the oligonucleotides (primers and probes) against commercially available controls - 6th WHO International Standard for hepatitis C virus RNA for nucleic acid amplification techniques NIBSC code: 18/184 and PEI Reference Preparation HCV RNA (#3443/04).

Cross-Reactivity

Wet testing was performed against the genomic or synthetic DNA/RNA of the pathogens (from ATCC) available in the laboratory on Bio-Rad CFX Opus 96, QuantStudio™ 5 (Thermo Fisher) and Insta Q96® Plus Real Time PCR Systems for any potential cross-reactivity. None of the tested pathogen in the below mentioned table showed any reactivity to the primers- probes of the Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit. In addition, the specificity was validated with HCV negative plasma samples (n=25). None of the tested HCV negative samples generated positive signal with the HCV primers-probes used in the kit.

Human immunodeficiency virus 1 (HIV-1) (VR- 3245SD)	Human parainfluenza virus 1 strain C35 (VR-94DQ)
Hepatitis A virus (VR-3257SD)	Plasmodium falciparum strain 3D7 (PRA-405)
Hepatitis E virus (VR-3258SD)	Plasmodium vivax DNA (PRA-3004SD)
Hepatitis B virus (VR-3232SD)	Quantitative Synthetic DNA from Plasmodium malariae (PRA- 3001SD)
Hepatitis C virus (VR-3233SD)	Genomic DNA extracted from Klebsiella pneumoniae (Strain No. BAAATCC2146)

Dengue virus (1-4) (VR-3228SD, VR-3229SD, VR-3230SD, VR-3231SD)	Genomic DNA extracted from Streptococcus pneumoniae strain (ATCC 49619)
Chikungunya virus (VR-3246SD)	Quantitative Genomic DNA from Staphylococcus epidermidis FDA strain PCI 1200 (12228DQ)
Human herpesvirus 2 (VR-540DQ)	Candida albicans strain SC5314 (MYA-2876DQ)
Quantitative Synthetic DNA from Human papillomavirus 16 (VR-3240SD)	Quantitative Genomic DNA from Escherichia coli (10798DQ)
Quantitative Synthetic DNA from Human papillomavirus 18 (VR-3241SD)	*Genomic DNA extracted from Salmonella typhi (ATCC 14028)*
Human coronavirus 229E (VR-740D)	Mycobacterium tuberculosis strain H37Ra (25177DQ)
Human adenovirus 1 strain Adenoid 71 (VR-1DQ)	Blood DNA

Extraction kit compatibility:

The following kits and systems are suitable for nucleic acid extraction:

Himedia Viral Purification Nucleic Acid kits MB582, MB615, MB582PC16, MB582MPF16, MB582MPF-32, MB582MPF-96, QIAamp Viral RNA Kits and MagMAX TM Viral/Pathogen Nucleic Acid Isolation Kit. Alternative nucleic acid extraction systems and kits might also be appropriate. The suitability of the nucleic acid extraction procedure for use with Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit must be validated by the user.

Warning

Not for Medicinal Use.

Precautions

Read the procedure carefully before beginning the protocol. Wear protective gloves/protective clothing/eye protection/face protection. Follow good clinical laboratory practices while handling clinical samples. Standard precautions should be followed as per the established guidelines. Safety guidelines may be referred to in safety data sheets of the product.

Quality Control

Each lot of Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit is assayed for contaminating endonuclease, exonuclease, and non-specific DNase activities. It has been functionally tested in amplification assay.

Limitations

Strict compliance with the Instructions for Use is required for optimal results and the use of the kit is limited to staff qualified clinical laboratory personnel trained in the techniques of real-time PCR and in vitro diagnostic procedures. Appropriate specimen collection, transport, storage and processing procedures are required for the optimal performance of this test. This assay must not be used on the specimen directly. Viral RNA should be extracted from human plasma samples using appropriate nucleic acid extraction methods. Presence of PCR inhibitors and other interferences may lead to false negative or invalid results. Although rare, mutations within the highly conserved regions of the targets genes covered by the kit's primers and/or probe may result in failure to detect the presence of pathogen. As with any diagnostic test, results of the Hi-PCR® Hepatitis C Virus (HCV) Probe PCR Kit need to be interpreted in consideration of all clinical and laboratory findings. Performance of the kit in monitoring treatment of HCV infection has not been evaluated.

Troubleshooting Guide

Sr. No.	Problem	Cause	Solution
1	No amplification	Degraded samples	Check the integrity of extracted RNA using agarose gel electrophoresis.
			Use freshly prepared RNA to ensure the availability of intact template sequence for efficient amplification.
		Error in protocol setup	Check whether all components are added in correct volume as per the manual.
		Inappropriate storage conditions	Store the reagents at recommended temperature for its optimal performance. Check expiry of the reagents and use new lot reagents if necessary.
		Incorrect PCR programming	Ensure selection of appropriate fluorescence channel as detailed in the manual
			Compare the PCR program to the manual.
2	Variability between replicates	Error in reaction set-up	Prepare a large volume master mix, vortex thoroughly and aliquot into reaction tubes.
		Air bubbles in reaction mix	Briefly centrifuge reaction samples/plate prior to running on a Real-Time PCR instrument.
		Pipetting error	Ct values of replicates can show increased variation due to poor laboratory technique or imprecise pipettes. Use calibrated pipettes. Repeat the run.
3	Amplification in negative template control	Cross contamination during handling	Replace all critical solutions. Repeat the analysis of all tests with fresh aliquots of critical reagents. Follow good laboratory practices to avoid contamination issues.

Safety Information

HiMedia's Hi-PCR® Hepatitis C Virus (HCV) Detection Probe PCR Kit is for laboratory use only, not for drug, household, or other uses. Take appropriate laboratory safety measures and wear gloves when handling.

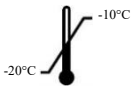
Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Following established laboratory procedures in disposing of infectious materials and materials that comes into contact with clinical samples must be decontaminated and disposed of in accordance with current laboratory techniques.

Technical Assistance

At HiMedia, we pride ourselves on the quality and availability of our technical support. For any kind of technical assistance, mail at mb@himedialabs.com.

Symbols

	Manufacturer		Do not use if package is damaged
	Batch code		Temperature limit
	Date of manufacture (YYYY-MM)		Consult instructions for use
	Use-by date (YYYY-MM)		Catalogue number

Identification No.: PIMBPCR106
Rev.No.: 03
Date of Issue: 2026-02