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TECHNOLOGY FOR MOLECULAR BIOLOGY CATALOGUE

OUR STORY



We were living comfortably, doing our routines like everyone when the sudden disease of “Rashin”, one of our beloved ones, outraged us, and we got up to assist and ask for support

Unfortunately, despite all kindness and assistance received, she succumbed to death as the deficits and sanctions overrode

And here we are. mourning her huge loss, thinking what shall be done from this moment forward

We had the knowledge

The ability

The noble objective

The need

And the hope

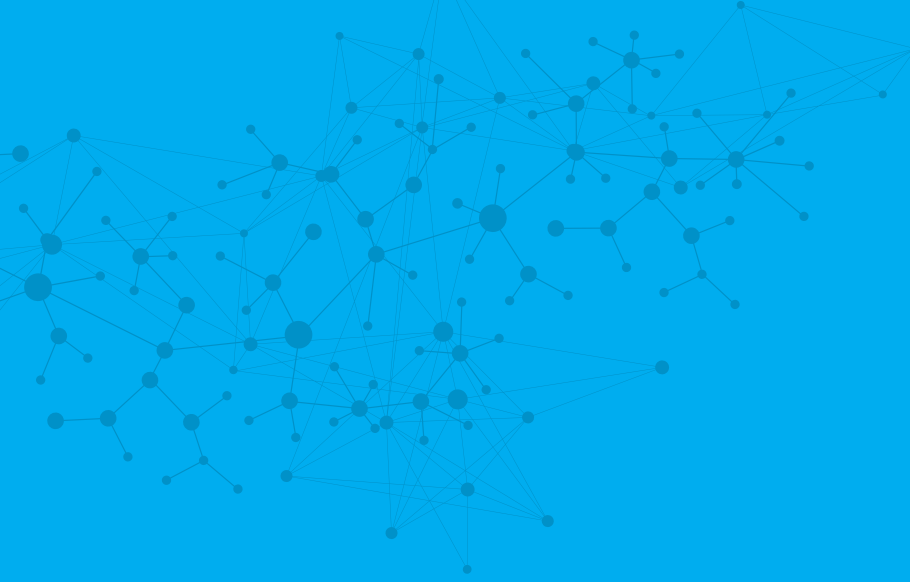
So we decided to make whatever we are deprived of.

We intended, did all in our power, and succeeded.

We stepped in a way full of light and hope. There adversities are aplenty but we have a firm intention and are decisive to help and support all who need what we make.

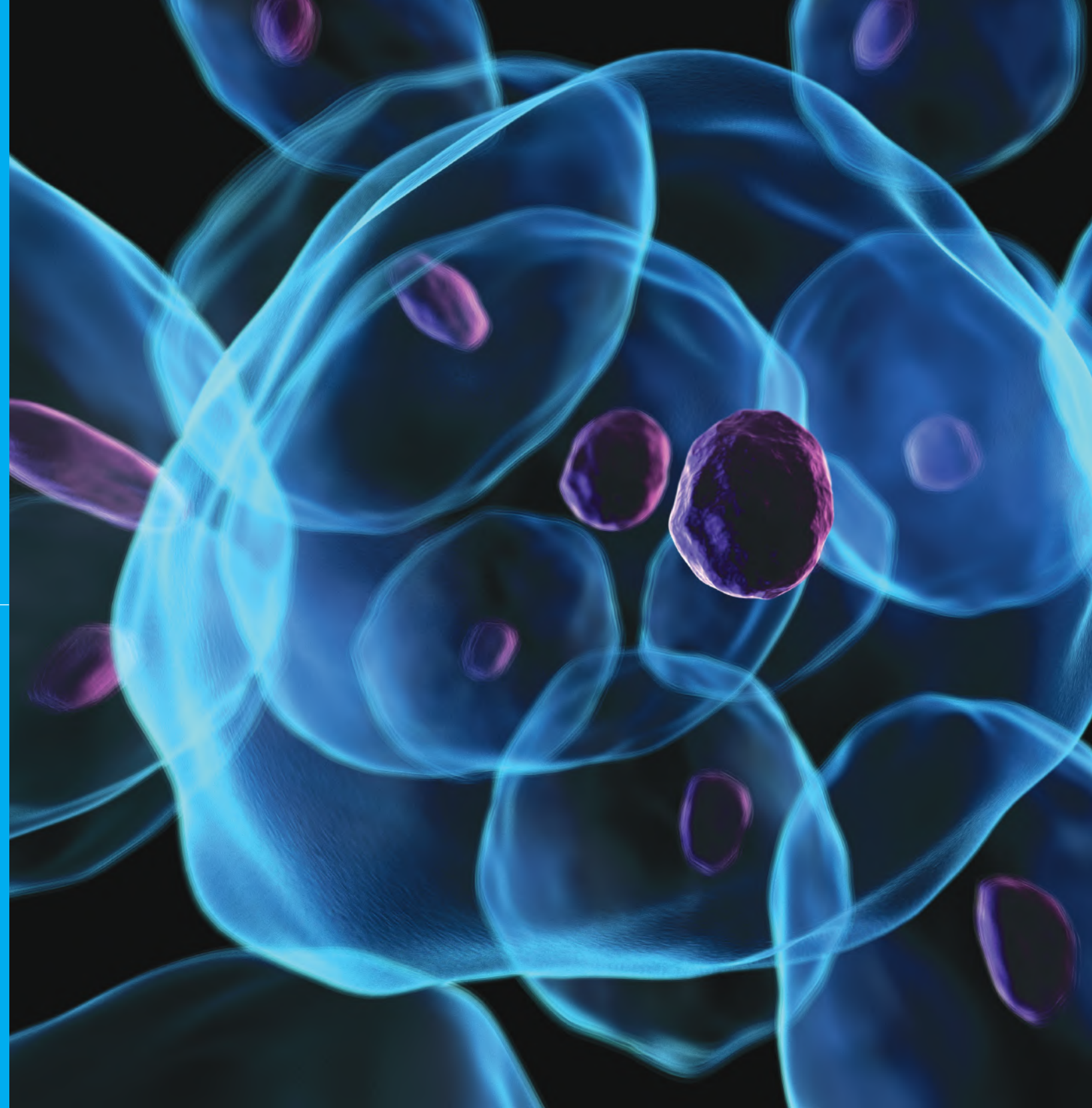
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01

**(MyCo Find) Mycoplasma PCR
Detection Kit**



Pathogen Information

Mycoplasma is common and serious contaminants of cell cultures. Mycoplasma is often not visible and does not respond to antibiotics, and therefore it is a major issue that requires monitoring and early detection. Up to %30 of cell cultures may be contaminated with Mycoplasmas, the main contaminants being the species *M. orale*, *A. laidlawii*, *M. arginini* and *M. hyorhinis*. These organisms produce a variety of effects on the infected cells in culture, including changes in metabolism growth, viability and morphology, thereby altering the phenotypic characteristics of the host cells. Therefore there is an absolute requirement for routine, periodic assays to diagnose possible Mycoplasma contamination of all cell cultures, particularly continuous or established cell lines.

Principle

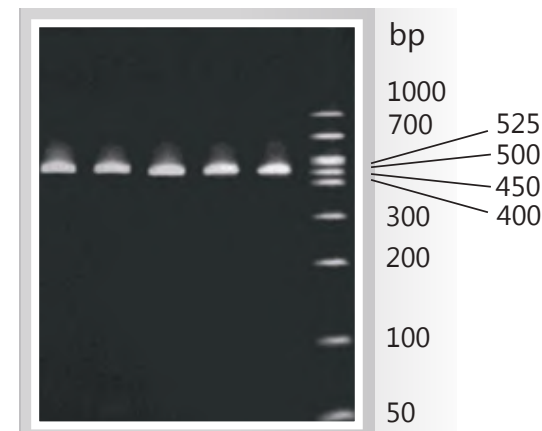
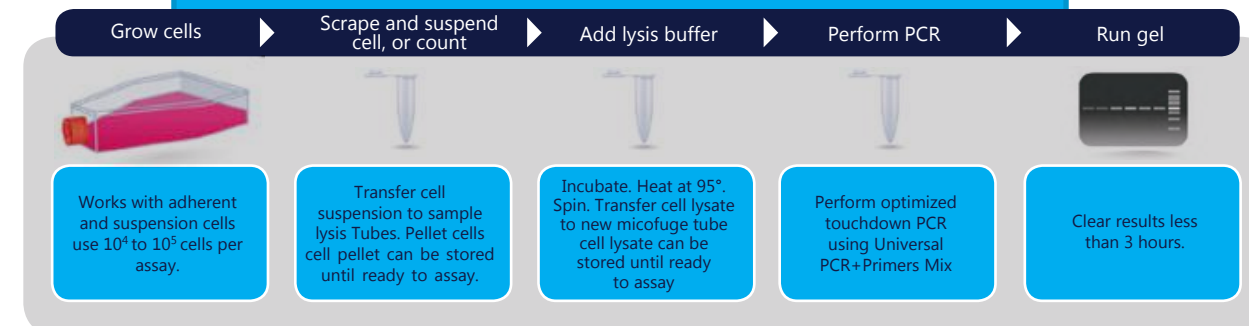
Mycoplasma PCR Detection Kit constitutes a ready-to-use system for the isolation and detection of Mycoplasma using end-point PCR. The Mycoplasma DNA is isolated free from inhibitors, and can then be used as the template in a PCR reaction for Mycoplasma detection using the provided Mycoplasma Master Mix. The Mycoplasma Mastermix contains reagents and enzymes for the Specific amplification of a narrow size range (400-500 bp) for the majority of relevant mycoplasma.

Touchdown polymerase chain reaction (PCR):

Touchdown polymerase chain reaction (PCR) is a method to decrease off-target priming and hence to increase the specificity of PCRs. In touchdown PCR the temperature selected for the annealing step is initially set 5°C-10°C higher than the calculated T_m of the primers. Annealing under conditions of high stringency favors the formation of perfect primer-template hybrids.

In subsequent cycles, the annealing temperature is gradually decreased by a small amount so that by the end of the PCR, the annealing temperature is 2°C-5°C below the calculated T_m of the primers. By then, the target sequence will have undergone several cycles of geometric amplification and therefore becomes the dominant product of the PCR.

MYCOPLASMA DETECTION KIT FLOWCHART



Mycoplasma PCR specificity for Mycoplasma and Acholeplasma species:

M. orale(Or), *A. laidlawii*(Ala), *M. arginini*(Ar),
M. fermentans(Fe) and *M. pneumoniae*(Pn).
M: size marker

Species	Amplican size [bp]
<i>M.orale</i>	462
<i>M.hyorhinis</i>	464
<i>M.laidlawii</i>	438
<i>M.salivarium</i>	466
<i>M.arginini</i>	465
<i>M.fermentans</i>	461
<i>M.haminis</i>	436
<i>M.pneumoniae</i>	470
Control Positive	438
Size range	438-470

Cat

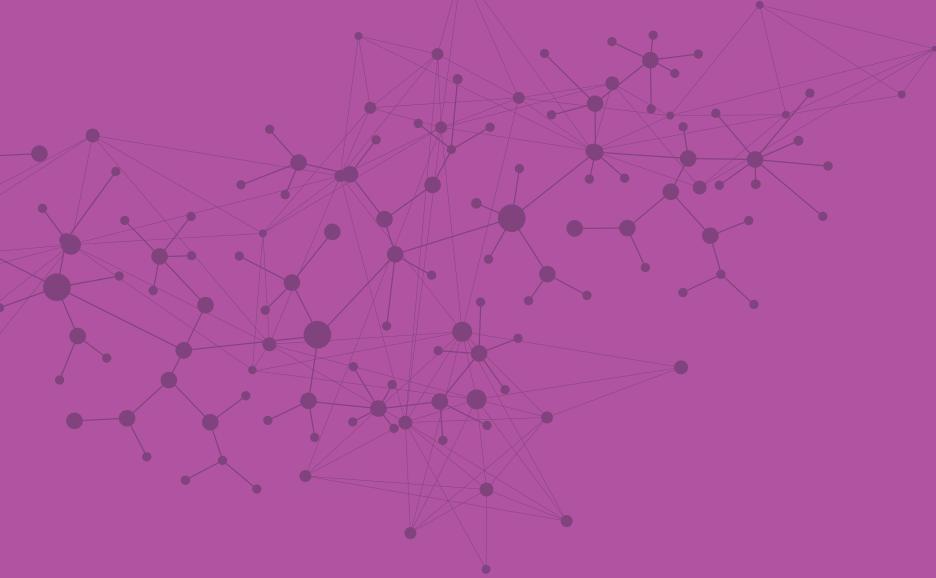
P001

Products

Mycoplasma Detection Kit
by touch Down PCR

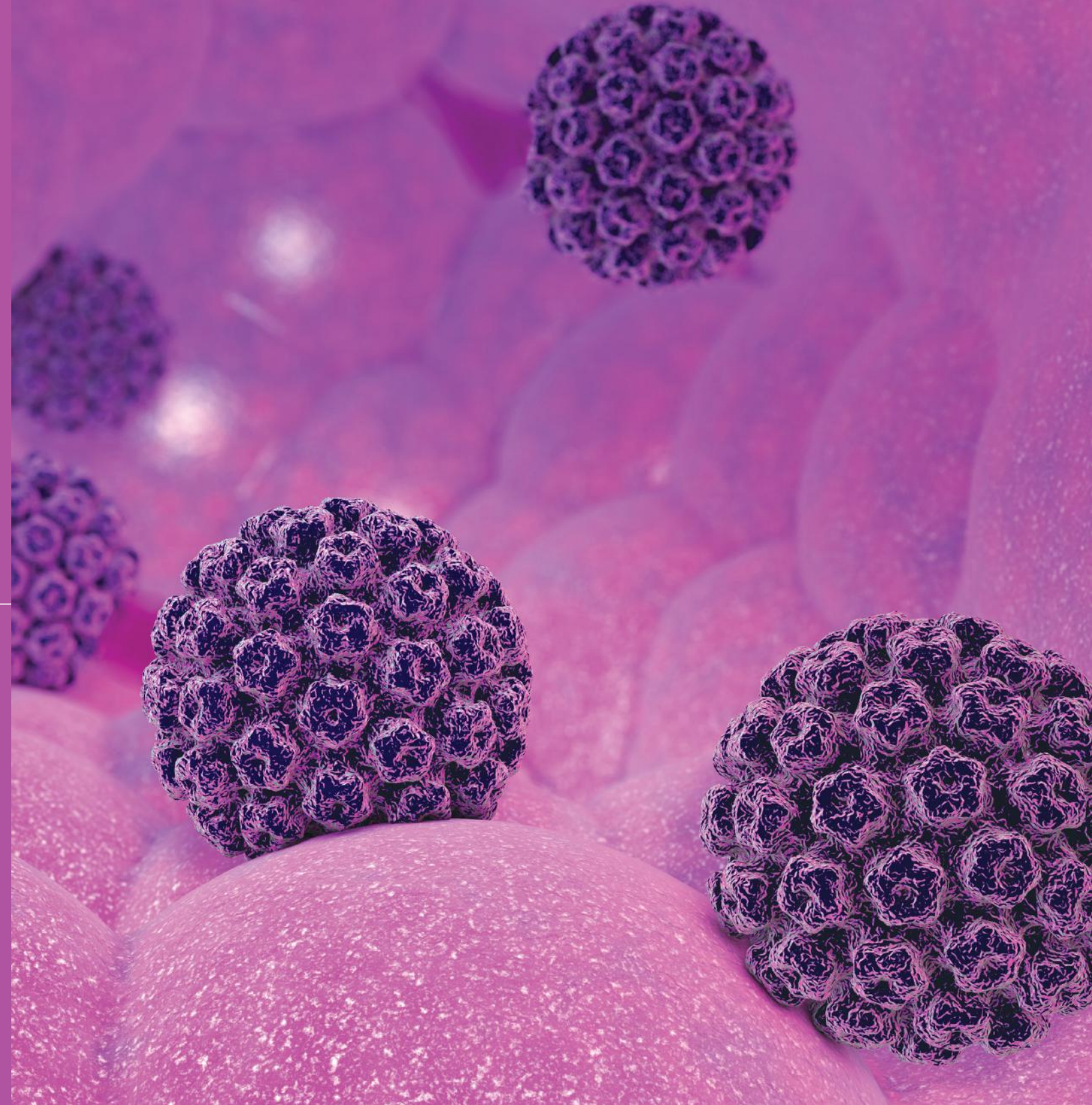
Reactions

50



02

HPV High Risk Detection Kit



Real quality HPV High Risk Multiplex Detection Kit

Summary and Explanation

Human papillomaviruses (HPV) belong to the family of Papillomaviridae and are small double stranded DNA viruses. The circular genome is approximately 7.9 kilo bases in size. More than 100 types of HPV have been identified, of which certain HPV types, known as high-risk HPV (hrHPV) like HPV 16 and 18, are associated with the induction of mucosal lesions that can progress to malignancy. Cervical cancer and its precursor lesions (cervical intraepithelial neoplasia, CIN) are the most well-known complications of a persistent infection with a high risk type of HPV.

The viral genome contains early (E) and late (L) genes, which encode proteins necessary for early and late stages of the HPV life cycle, respectively. The E6 and E7 gene products of hrHPV types have carcinogenic properties and are necessary for malignant transformation of the host cell. Malignant progression is often associated with viral integration into the genome of the host cell. Integration results in interruption of the viral genome in a region that may extend from the E1 to the L1 open reading frame. This may have consequences for PCR-mediated amplification of viral DNA in these regions. As not only the initiation but also the maintenance of the transformed phenotype depends on continuous expression of the viral oncoproteins, the viral E6/E7 region is invariably retained in integrated viral genomes in cervical cancers (6). The PayeshGene HPV PCR Test targets a conserved region within the E7 gene. The assay has been clinically validated according to the international guidelines for HPV detection assays.

INTRODUCTION HPV (Human papillomavirus)

Infection is known as a major cause of cervical cancer in woman. HPV is a DNA virus, composed of an icosahedral viral particle containing an 8000 base pair double-stranded circular DNA molecule. More than 200 genotypes of HPV are identified and classified into high-risk (HR) or low-risk (LR) groups according to their known risk association with cancers. The HPV viral DNA can be found as episomal virions in the cytoplasm, or integrated into host chromosome. Persistent infection with certain HPV genotypes would lead to the development of cervical cancer. Infection of HR HPV can cause cytological and histological changes that can be detected by Pap screening, colposcopy, or biopsy. Nonetheless, women tested Pap negative or HR HPV DNA negative still had the possibility to be at low risk for having or developing cervical precan-cerous lesions.

PRINCIPLE OF PCR DETECTION The PayeshGene High-Risk HPV (14 Types) DNA qPCR Detection Kit is a dual-color multiplex fluorescent probe based Taqman® Real-Time PCR assay system. The assay can specifically detect 14 high risk types of HPV (Human papillomavirus) viral DNA and an endogenous internal control (IC) that is a highly conserved region of human β-globin gene (HBB) in the same reaction. The internal control is used to control the whole assay workflow efficiency from specimen collection, DNA extraction, PCR amplification to data analysis. The amplification system also includes dUTP and Uracil N-Glycosylase (UNG) to minimize amplification product contamination. The amplified HPV and IC DNA are detected by FAM and ROX channels using Applied Biosystems 7500 Real-Time PCR System.

Cat	Products	Reactions
V001	Real quality HPV High Risk Multiplex Detection Kit	20

03

Residual Host Cell DNA Detection Kit



Specific Detection Of Residual CHO/BHK Host Cell DNA in Recombinant Protein Sample (RHD Kit)

Specific Detection of Residual CHO/BHK Host Cell DNA in Recombinant Protein Sample (RHD Kit)
All biological drug products are required to be characterized for safety, quality and efficacy.

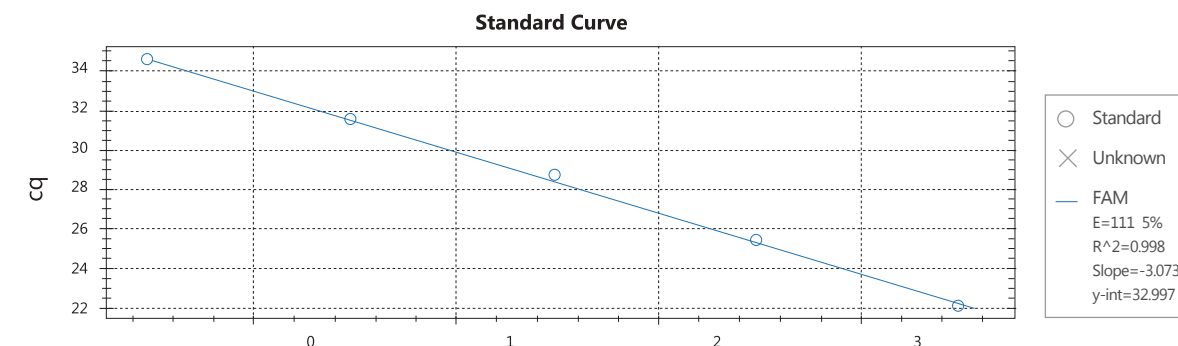
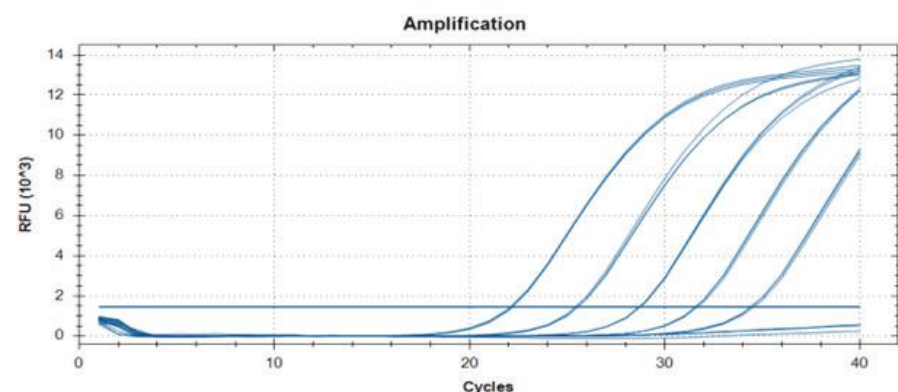
The expression of biological products using recombinant DNA technology has enabled the use of peptides and proteins for therapeutic use. One of the main concerns with this expression technology especially in immortal cell lines is the possibility of transference of the immortal trait to the end user of the medication. Thereby, potentially inducing cancer.

The World Health Organization (WHO), has released guidance, requiring the monitoring throughout the manufacturing process of HCDNA to demonstrate reduction to safe levels, either by process validation or lot release testing.

The WHO guidance for the potential risk of residual host cell DNA suggests these factors should be considered;

- The manufacturing processes ability to remove DNA
- The level of DNA fragmentation during processing
- Any DNA modifications during the processing that reduces its biological functions

The PayeshGene kit has sensitivity down to 5 ng/ mL for dsDNA with a quantitation range up to 1000 ng/mL. The kit provides a double stranded DNA standard for the production of a standard curve against which the unknown samples can be measured. The advantages of using a general nucleic acid test include the detection of all forms of nucleic acid including smaller fragments and single stranded forms,



off-the-shelf availability reducing the time from validation to an in-use assay.

Whether using a general fluorescence based assay or PCR the nucleic acid is generally extracted from the sample as a first step to allow detection in the absence of inhibitory compounds that may be in the sample matrix.

Validation of PayeshGene residual host cell DNA Kit cover these aspects;

- Accuracy
- Precision - Repeatability - Intermediate precision
- Specificity
- Limit of quantitation (LOQ)
- Linearity
- Range

Segregation of activities - DNA extraction

- Mastermix preparation
- Real Time PCR set up
- Running the Real Time PCR
- Use of a validated cleaning/decontamination program

Cat	Products	Reactions
H0001	Specific Detection Of Residual CHO/BHK Host Cell DNA in Recombinant Protein Sample (RHD Kit)	20



04

HPV Real Time PCR Detection Kits



HBV Real -Time PCR Kit

Introduction

The PayeshGene HBV detection consists in amplification of a specific conservative DNA sequence and in measurement of fluorescence increase. The HBV presence is indicated by the FAM fluorophore fluorescence growth. An Internal Control is included in the PCR kit, controlling the possible inhibition of the PCR and the DNA extraction process quality. The detection kit takes advantage of the «hot start» technology, minimizing non-specific reactions and assuring maximum sensitivity.

Technology: real-time PCR

Target Sequence: DNA conservative sequence

Specificity: HBV genotype A – H

Sensitivity: reaches up to 50 IU/μl

Reporting Units: IU/μl (1IU = 5 cp)

Extraction/Inhibition Control: PCR inhibition and DNA extraction efficiency control

Validated Specimen: plasma, serum

Storage: -20 ± 5 °C

Instruments: Applied Biosystems 7300 / 7500 Real-Time PCR System, Rotor-Gene 3000 / 6000 / Q

Required Detection Channels: FAM, HEX

HCV Real-Time PCR Kit

Introduction

The PayeshGene HCV Real-Time PCR Kit constitutes a ready-to-use system for the detection of HCV RNA using polymerase chain reaction (PCR). The Hepatite C Virus Master A and B contain reagents and enzymes for the reverse transcription and specific amplification of a 140 bp region of the HCV genome, and for the direct detection of the specific amplicon in fluorescence channel. In addition, the PayeshGene HCV Real-Time PCR Kit contains a second heterologous amplification system to identify possible PCR inhibition. This is detected as an internal control (IC) in fluorescence channel Cycling Yellow.

Product Description

HCV is an enveloped RNA virus in the flaviviridae family which appears to have a narrow host range. It is a major cause of acute hepatitis and chronic liver disease, including cirrhosis and liver cancer. HCV is spread primarily by direct contact with human blood. HCV real time RT-PCR kit contains a specific ready-to-use system for HCV detection (for genotype I~VI) by Reverse Transcription Polymerase Chain Reaction (RT-PCR) in the real-time PCR system.

Technology: real-time PCR

Target Sequence: DNA conservative sequence

Specificity: genotype I~VI

Sensitivity: reaches up to 10 IU/μl

Reporting Units: IU/μl (1IU = 3.8 cp)

Extraction/Inhibition Control: PCR inhibition and RNA extraction efficiency control

Validated Specimen: plasma, serum

Storage: -20 ± 5 °C

Required Detection Channels: FAM, HEX

HIV Real -Time PCR Kit

Introduction

The PayeshGene HIV-1 RT-PCR Kit is an in vitro nucleic acid amplification test for the quantitation of human immunodeficiency virus type 1 (HIV-1) RNA in human plasma. This diagnostic test kit utilizes the reverse transcription polymerase chain reaction (RT-PCR). Plasma samples containing Group M Subtypes A–H have been validated for use in the assay.

The PayeshGene HIV-1 RT-PCR Kit Master A and B contain reagents and enzymes for the reverse transcription and specific amplification of a 110 bp region of the HIV-1 genome, and for the direct detection of the specific amplicon in fluorescence channel.

Technology: real-time PCR

Target Sequence: DNA conservative sequence

Specificity: Group M Subtypes A–H

Sensitivity: reaches up to 100 IU/μl

Reporting Units: IU/μl (1IU = 0.56 cp)

Extraction/Inhibition Control: PCR inhibition and RNA extraction efficiency control

Validated Specimen: plasma, serum

Storage: -20 ± 5 °C

Instruments: Applied Biosystems 7300 / 7500 Real-Time PCR System, Rotor-Gene 3000 / 6000 / Q

Required Detection Channels: FAM, HEX

CMV Real -Time PCR Kit

Introduction

PayeshGene CMV Real-Time PCR Kit is an in-vitro nucleic acid amplification assay for quantification of Cytomegalovirus (CMV) DNA in human serum or plasma (EDTA) using payeshGene Viral DNA Isolation Kit. The PayeshGene CMV Real-Time PCR Kit constitutes a ready-to-use system for the detection of CMV DNA using polymerase chain reaction. The CMV Master contains reagents and enzymes for the specific amplification of a 105 bp region of the CMV genome, and for the direct detection of the specific amplicon in fluorescence channel Cycling Green.

Technology: real-time PCR

Target Sequence: DNA conservative sequence

Specificity: CMV DNA

Sensitivity: reaches up to 100 IU/μl

Reporting Units: IU/μl (1 IU = 5 cp)

Extraction/Inhibition Control: PCR inhibition and RNA extraction efficiency control

Validated Specimen: plasma, serum

Storage: -20 ± 5 °C

Instruments: Applied Biosystems 7300 / 7500 Real-Time PCR System, Rotor-Gene 3000 / 6000 / Q

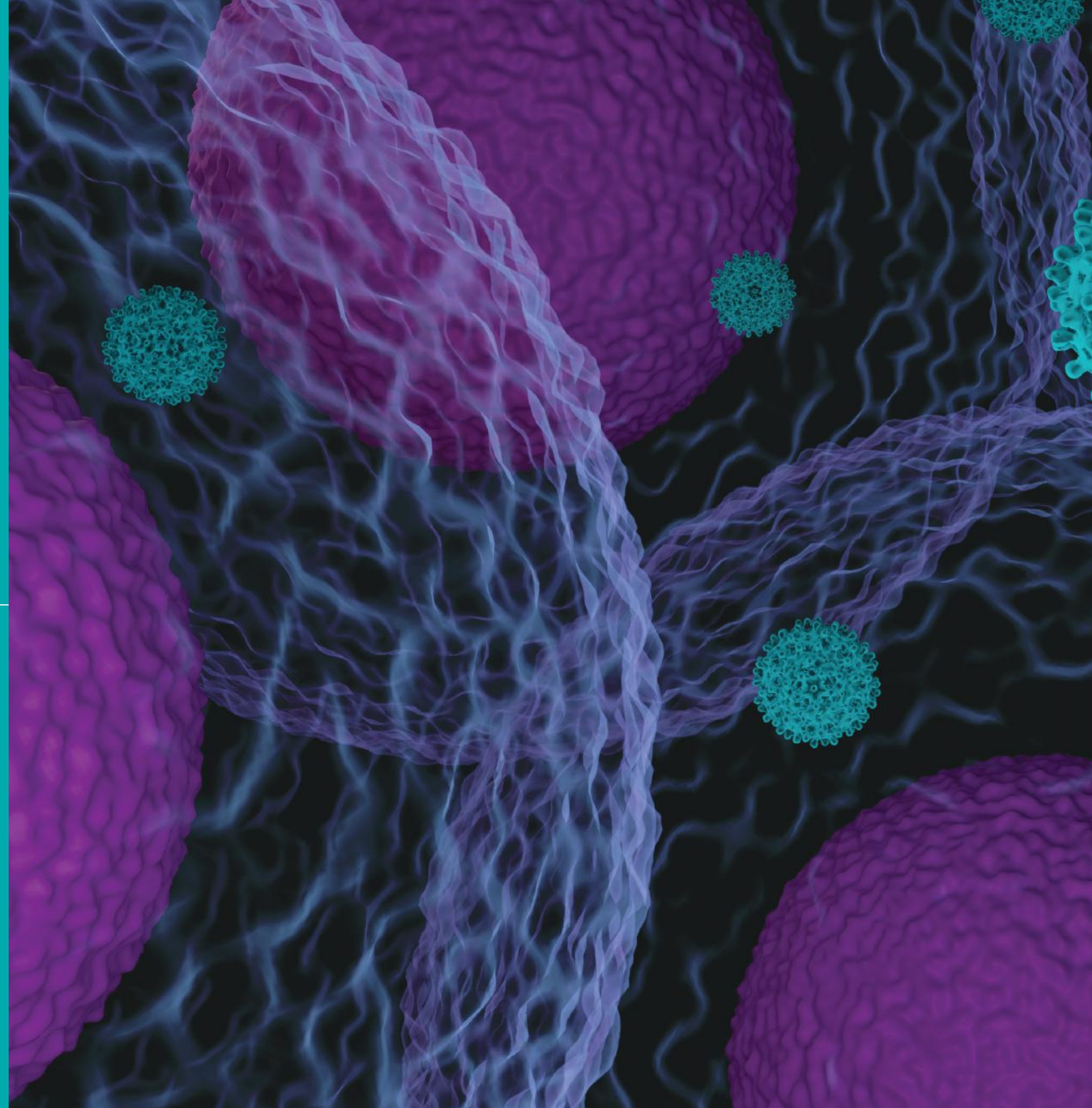
Required Detection Channels: FAM, HEX

Cat	Products	Reactions
A0003	HBV Real -Time PCR Kit	48
A0004	CMV Real-Time PCR Kit	48
A0005	HIV Real -Time PCR Kit	48
A0006	HCV Real -Time PCR Kit	48



05

PCR Detection Kits



CMV PCR Detection Kit

The PayeshGene CMV PCR Kit constitutes a ready-to-use system for the detection of CMV DNA using polymerase chain reaction

SPECIFICITY:

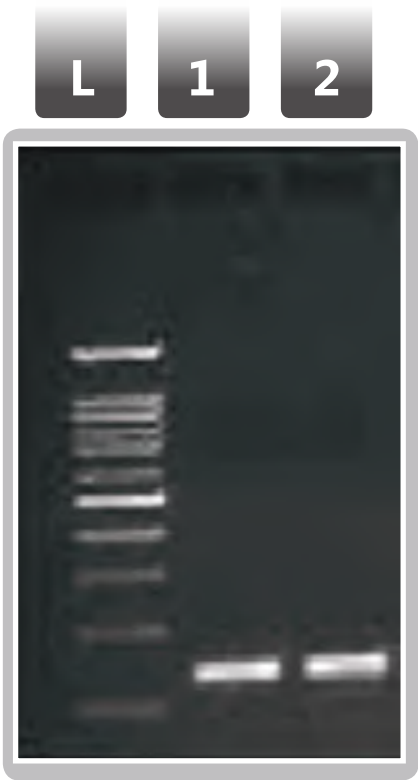
The specificity of the PayeshGene CMV PCR Kit is first and foremost ensured by the selection of the primers, as well as the selection of stringent reaction conditions. The primers were checked for possible homologies to all sequences published in gene banks by sequence comparison analysis. The detectability of all relevant strains has thus been ensured. Moreover, the specificity was validated with 100 different CMV negative plasma samples.

Principle

Pathogen detection by the polymerase chain reaction (PCR) is based on the amplification of specific regions of the pathogen genome. Amplified products were detected by gel electrophoresis.

Pathogen information:

CMV is a lytic virus that causes a cytopathic effect in vitro and in vivo. The pathologic hallmark of CMV infection is an enlarged cell with viral inclusion bodies. Cells that exhibit cytomegaly are also seen in infections caused by other Betaherpesvirinae.





Gel Electrophoresis ,PCR product for CMV detection with PayeshGene Kit

1) PCR Product CMV (Control Positive) 110bp

2) PCR Product CMV (Patient) 110bp

Cat	Products	Reactions
Q0004	CMV PCR Detection Kit	50

HBV PCR Detection Kit

Detection of hepatitis B virus (HBV) DNA in serum of patients with chronic HBV infection.

SPECIFICITY:

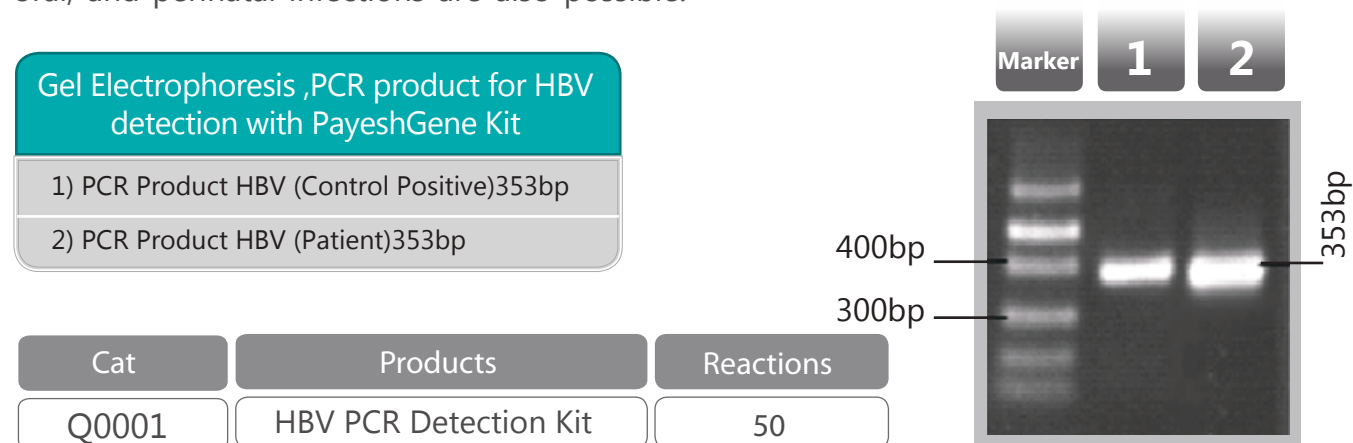
- Secured by targeting the DNA conservative sequence of x-Gene
- Detection of all HBV genotypes A – H
- Contains all components for PCR amplification
- No additional pipetting of PCR reagents necessary
- Ensures reproducibility of results

Principle

Pathogen detection by the polymerase chain reaction (PCR) is based on the amplification of specific regions of the pathogen genome.

Pathogen information:

Hepatitis B virus (HBV) is mainly transmitted via blood or blood products. However, sexual, oral, and perinatal infections are also possible.



HCV PCR Detection Kit

Detection of hepatitis C virus (HCV) RNA in serum of patients with chronic HCV infection.

SPECIFICITY:

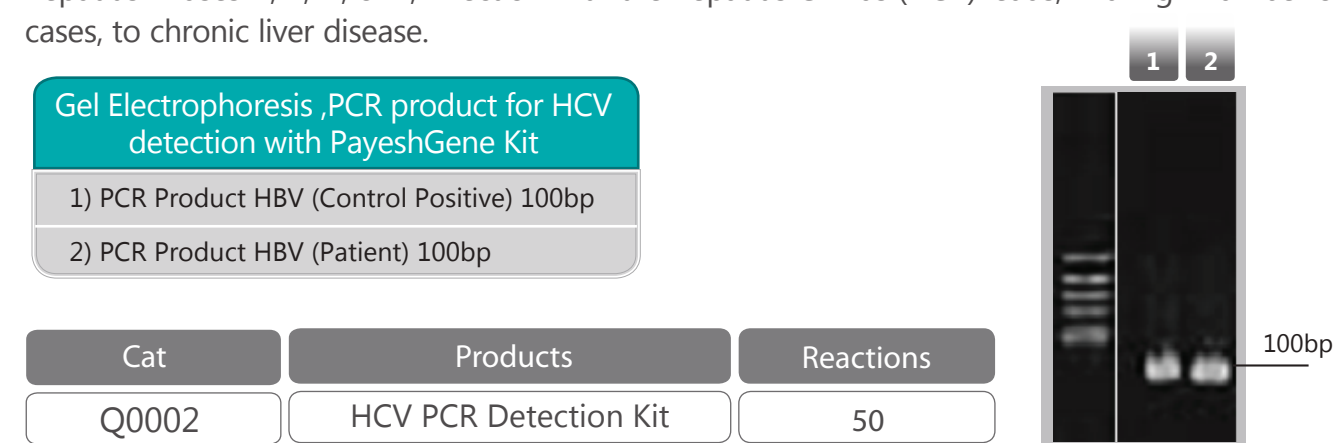
- Secured by targeting the DNA conservative sequence
- Contains all components for PCR amplification
- No additional pipetting of PCR reagents necessary
- Reverse transcription and PCR amplification
- Ensures reproducibility of results

Principle

Pathogen detection by the polymerase chain reaction (PCR) is based on the amplification of specific regions of the pathogen genome.

Pathogen information:

Hepatitis C is a liver inflammation caused by the virus of the same name. As opposed to the other hepatitis viruses A, B, D, or E, infection with the hepatitis C virus (HCV) leads, in a high number of cases, to chronic liver disease.



HIV-1 PCR Detection Kit

The PayeshGene HIV-1 PCR Kit constitutes a ready-to-use system for the detection of HIV-1 RNA using polymerase chain reaction

SPECIFICITY:

- Contains all components for PCR amplification
- No additional pipetting of PCR reagents necessary
- Reverse transcription and PCR amplification
- Ensures reproducibility of results

Principle

Pathogen detection by the polymerase chain reaction (PCR) is based on the amplification of specific regions of the pathogen genome. Amplified products were detected by gel electrophoresis.

Pathogen information:

The human immunodeficiency virus (HIV) is a retrovirus that causes acquired immunodeficiency syndrome (AIDS). There are two types of HIV responsible for human infections, HIV-1 and HIV-2, which differ in their virulence and prevalence. Most reported cases of AIDS around the world have been attributed to HIV-1. Infection with HIV occurs by the transfer of infected blood, vaginal fluid, breast milk and other body fluids. Within these body fluids HIV is present as both free virus particles and virus within infected immune cells.

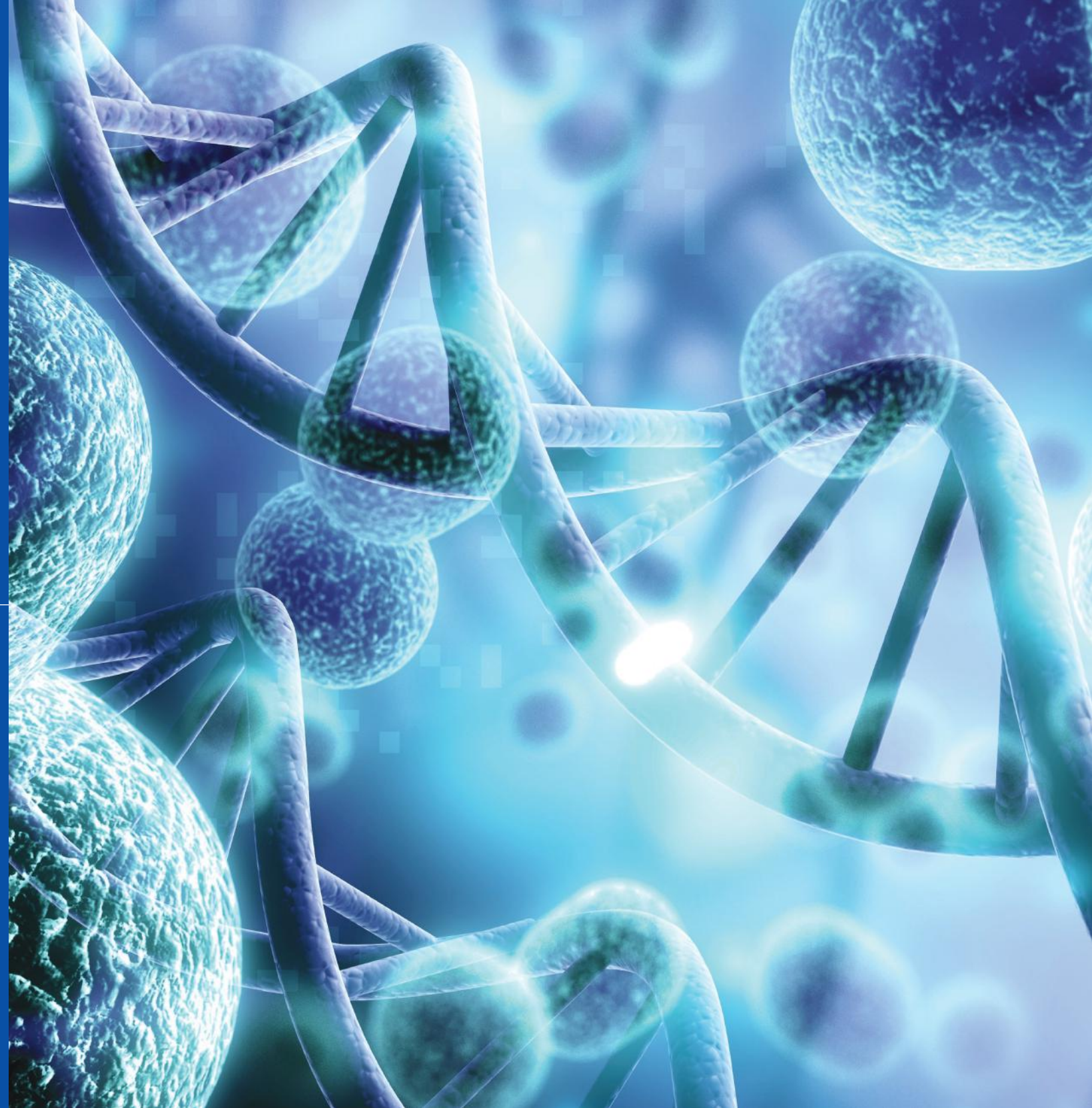


Cat	Products	Reactions
Q0003	HIV-1 PCR Detection Kit	50



06

DNA Isolation Kits



DNA Isolation Kits

Introduction

PayeshGene DNA Extraction Kits are designed for rapid purification of total DNA (e.g., genomic, mitochondrial, and pathogen) from a variety of sample sources including fresh or frozen animal tissues and cells, blood, or bacteria. PayeshGene DNA Extraction Kits purified DNA is free of contaminants and enzyme inhibitors and is highly suited for

- PCR,
- Southern blotting,
- RAPD,
- AFLP,
- and RFLP applications

Purification requires no phenol or chloroform extraction or alcohol precipitation, and involves minimal handling. This makes DNeasy Blood & Tissue Kits highly suited for simultaneous processing of multiple samples.

Simple centrifugation processing completely removes contaminants and enzyme inhibitors such as proteins and divalent cations, and allows simultaneous processing of multiple samples in parallel. In addition, these kits procedures are suitable for a wide range of sample sizes. Purified DNA is eluted in low-salt buffer or water, ready for use in downstream applications. PayeshGene DNA Extraction Kits purified DNA typically has an A260/A280 ratio between 1.7 and 1.9, and is up to 50 kb in size, with fragments of 30 kb predominating. PayeshGene DNA Extraction Kits procedure also efficiently recovers DNA fragments as small as 100 bp.

Time required

- Total time: approx. 45 min (for whole blood or cultured cells)
- Hands-on time: approx. 15 min (for whole blood or cultured cells)

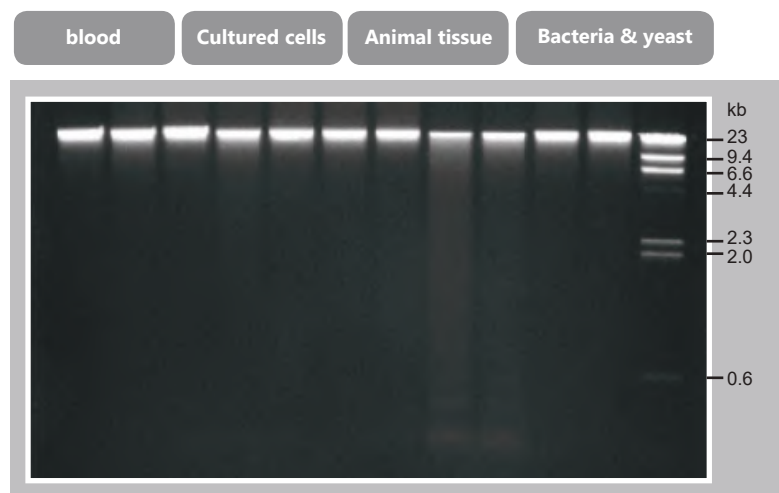
Principle and procedure

- PayeshGene DNA Extraction procedures are simple (see flowchart). Samples are first lysed using proteinase K.* Buffering conditions are adjusted to provide optimal DNA binding conditions and the lysate is loaded onto the spin column.

Starting Materials and Results

Yield: Variable, depending on sample type.

Sample	Amount	Yield (µg)	A260/280
Animal tissue	20-50 mg	5-10	1.6-1.9
Mammalian blood	200µl	3-6	1.5-1.8
Cultured cells	cells 10 ⁴ -10 ⁶	10-15	1.7-1.8
Bacteria and yeast	cells 10 ⁸ -10 ⁹	3-7	1.6-1.9



Benefits

- Saves time
- Improves PCR reproducibility and reliability, Minimizes DNA loss
- Ideal for a wide variety of research projects

PCR sample preparation

The PayeshGene DNA Extraction Kits has been evaluated for PCR sample preparation with whole blood and cultured cells as sample material. Amplification has been performed in ROTOR GEN using SYBR Green and Hybridization Probes as the detection formats. The following tables give information about the range of sample volume applied, modifications in the sample preparation procedure and expected results.

Sample	Volume/Amount Range	Typical concentration range [ng/μl]	Eluate use in RotorGen PCR (μl)
Whole blood human	1 – 50 μl*	0.5-25	¹⁻⁵ [0.5 ng – 125 ng]
Cultured cells, HEK293T	100 – 10 ⁵ cells	0.01 – 10	¹⁻⁵ [0.01 – 50 ng]

* Yield may vary between different blood donors because they may have different amounts of leukocytes

Cat	Products	Reactions
A0019	High Efficient BLOOD / Cell Cultured Genomic DNA Isolation Kit	50
A0024	High Efficient Bacterial /Yeast Genomic DNA Isolation Kit	50
A0023	High Efficient Tissue DNA Isolation Kit	50
A0031	High Efficient Mammalian Tissue DNA Isolation Kit	50

High Efficient Plant Genomic DNA Isolation Kit

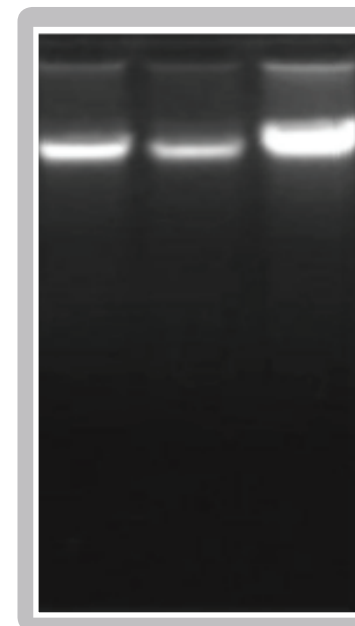
Introduction

Plants are diverse, and individual species and organs or tissues of plants can behave differently during extraction of RNA (and DNA) for use in molecular studies. Hence, a range of extraction methods has also been devised, depending on the tissue or genotype being extracted. Problems encountered include the presence of large quantities of polysaccharides; high levels of RNases; various different kinds of phenolics, including tannins; low concentrations of nucleic acids (high water content); tissue, such as lignin (wood), that is difficult to break up; and so on. In addition, sampling techniques can have an effect on yield and lack of degradation, recognizing also that most tissues extracted are generally composed of a range of cell types and, hence, functions.

Principle

The PayeshGene DNA Mini Kit (Plant) is a genomic DNA extraction kit optimized for genomic DNA, from plant tissue. This DNA extraction kit processes plant samples by grinding in liquid nitrogen followed by lysis buffer incubation.

DNA Isolation Kits



Different plant samples:

Sample	Concentration	OD 260/280	OD 260/230
Rice	640 ng/ml	1.81	2.04
Wheat	513 ng/ml	1.79	2.12
Rosemary	1135 ng/ml	1.83	2.10

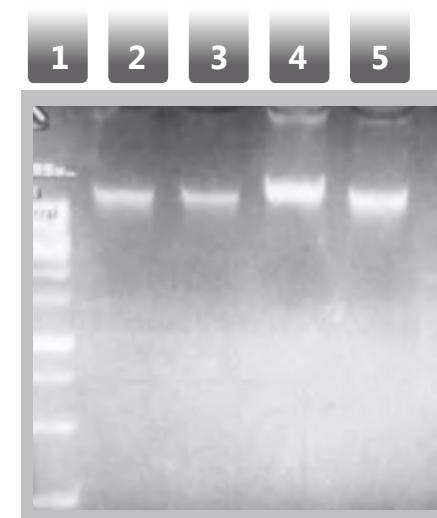
Gel Electrophoresis, Plant DNA Extraction with PayeshGene kit.

High Efficient Salive DNA Extraction Kit

For the rapid purification of high-quality DNA from preserved and fresh saliva samples

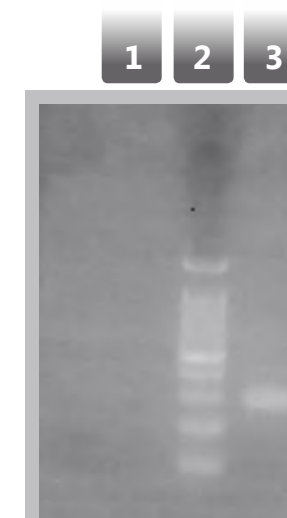
- **Fast, painless and non-invasive:** wide-applied sample collection method.
- **Pure DNA:** The Payesh Gene's kit is suitable in all downstream applications, including sensitive downstream assays.
- **A wide range of applications:** The Payesh Gene's kit is selected for most DNA isolation methods including PCR, qPCR, Sequencing, SNP analysis, Microarrays, etc.

Payesh Gene's Saliva DNA Isolation Kit provides a fast and simple procedure for isolating genomic DNA from saliva samples. Human genomic DNA extracted from buccal epithelial cells and white blood cells found in saliva can be used in various applications in diagnostics. The isolated DNA can be used for the detection of biomarkers to diagnose a disease, follow the diseases progress or monitor the effects of a particular treatment. Saliva DNA can also be used to diagnose particular types of infections. Isolation of DNA from saliva has become an attractive alternative to isolation from blood or tissue due to the fact that sample collection is non-invasive, the samples can be collected by individuals with little training, and no special equipment is required. Saliva DNA purified using Payesh Gene's kit is of the highest quality, and is compatible with a number of downstream research applications including PCR, Southern Blot analysis, sequencing and microarray analysis.



Agarose Gel electrophoresis Saliva DNA extraction with PayeshGene Kit

- 1) Ladder
- 2) Sample 20 µl
- 3) Sample 50 µl
- 4) Sample 100 µl
- 5) Sample 100 µl



PCR Product Genomic Saliva DNA

- 1) NTC
- 2) Ladder
- 3) PCR product IRF6 Gene

Cat

A0045

Products

High Efficient Salive DNA Extraction Kit

Reactions

50

Pure GEL and PCR Product Purification Kit

Introduction

In the presence of chaotropic salt, product DNA binds selectively to glass fibre fleece in a special centrifuge tube. The DNA remains bound while a series of rapid "wash-and-spin" steps remove contaminating small molecules (including small nucleic acids). Finally, low salt elution removes the DNA from the glass fiber fleece. The process does not require DNA precipitation, organic solvent extractions, or extensive handling.

Starting material

- 1-Research samples (100 µl) may be:
- 2-DNA products (>100 bp – 50 kb) from PCR
- 3-Enzymatically labeled, modified, or digested DNA (for example, products from restriction digests, alkaline phosphatase treatments, kinase reactions, or enzymatic labeling reactions)

Application

Preparation of concentrated, purified DNA, which may be used directly for labeling, sequencing, cloning and other routine applications.

Time required

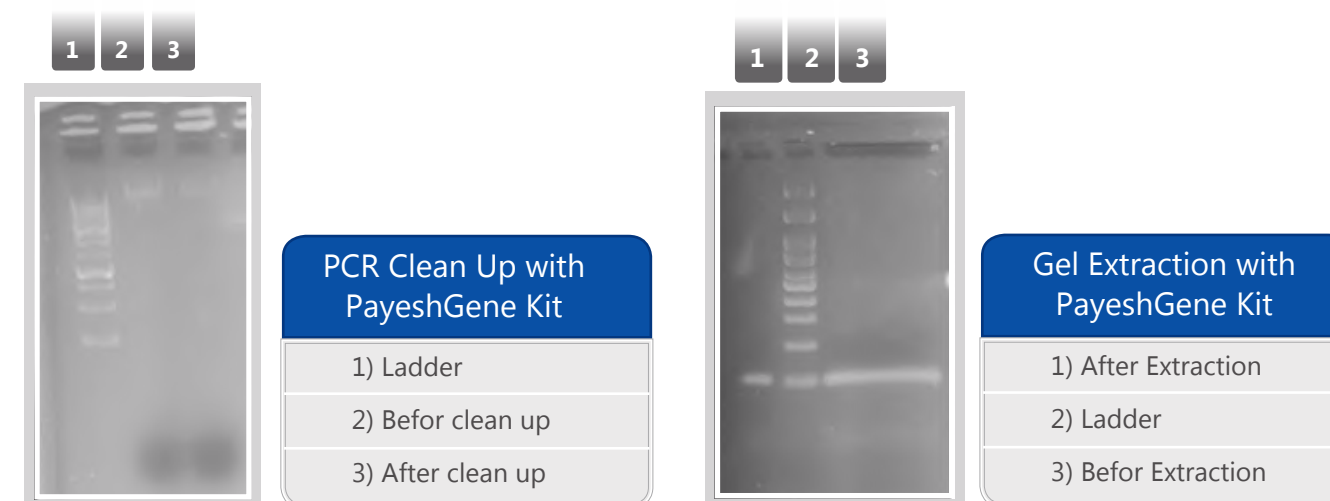
- Total time: approx. 15 min
- Hands-on time: <10 min

Results

- Yield: Variable, depending on sample volume and DNA size
- Purity: Purified DNA is free of short DNA (<100 bp), small molecules (for example, mineral oil, primers, salts, unincorporated nucleotides) and proteins (for example, thermostable enzymes)

Benefits

- **Saves time**, because the kit makes PCR products ready for downstream procedures in less than 15 min
- **Minimizes DNA loss**, because the kit removes contaminants without precipitation or other handling steps that lead to DNA loss or degradation
- **Increases lab safety**, because the kit does not use hazardous organic solvents
- **Improves performance of downstream applications**, because the kit removes DNA fragments smaller than 100 bp from the preparation.



Cat	Products	Reactions
A0020	High Efficient PCR Clean Up kit	50
A0026	High Efficient Gel DNA Recovery Kit	50

Plasmid Isolation Kit

Principle

Alkaline lysis releases plasmid DNA from bacteria and RNase removes all RNA in the lysate. Then, in the presence of a chaotropic salt, plasmid DNA binds selectively to glass fiber fleece in a special centrifuge tube. The DNA remains bound while a series of rapid “wash-and-spin” steps remove contaminating bacterial components. Finally, low salt elution removes the DNA from the glass fiber fleece. The process does not require DNA precipitation, organic solvent extractions, or extensive handling of the DNA.

Starting material

- 0.5 – 4.0 ml recombinant E. coli cultures research samples (at a density of 1.5 – 5.0 A600 units per ml)

Application

- Preparation of up to 15 µg purified plasmid DNA from bacterial cultures, which maybe used directly for PCR, cloning, sequencing, in vitro transcription, or generation of labelled hybridization probes.

Time required

- Total time: approx. 60 min

Results

- Yield: Variable, depending on the E. coli strain
- Purity: Plasmid DNA is free of all other bacterial components, including RNA

Benefits

- **Saves time,**
- **Minimizes DNA loss,** because the kit removes contaminants without precipitation or other handling steps that can lead to lost or degraded DNA
- **Increases lab safety,** because the kit does not use hazardous organic reagents such as cesium chloride, phenol, chloroform, or ethidium bromide
- **Improves reliability and reproducibility of downstream procedures,** because the kit removes RNA and other impurities that might cause the plasmid DNA to behave unpredictably



Plasmid DNA Extraction with PayeshGene Kit

- 1) Plasmid Extraction 1
- 2) Plasmid Extraction 2
- 3) Plasmid Extraction 3

Cat	Products	Reactions
A0025	Plasmid Isolation Kit	50

Viral Nucleic Acid Kit

Principle

Viruses, when lysed by detergent and Proteinase K, release total viral nucleic acids (NA). Then, in the presence of a chaotropic salt, viral NA binds selectively to glass fiber fleece in a special centrifuge tube. The NA remains bound while a series of rapid "wash-and-spin" steps remove contaminating cellular components. Finally, low salt elution removes the NA from the glass fiber fleece. The process does not require NA precipitation, organic solvent extractions, or extensive handling of the NA.

Starting material

Research samples may be 200 – 600 µl of:

- Serum
- Plasma
- Whole blood
- Cell culture supernatant

Application

- Preparation of highly purified viral nucleic acids (RNA or DNA), which may be used directly as templates for standard or long-template PCR or RT-PCR.
- Nucleic acid preparations obtained are suitable for PCR or RT-PCR; they are not tested for other applications.

Time required

- Total time: approx. 40 min

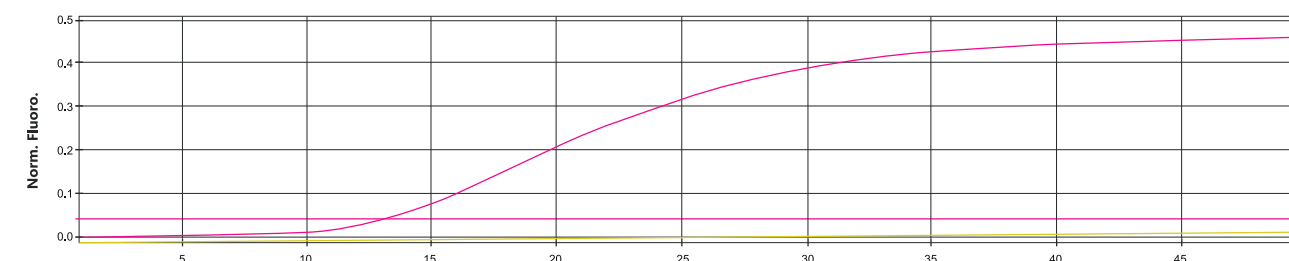
Results

- **Yield:** 50 µl eluate is enough for 8 – 14 RT-PCRs or 2 – 5 PCRs
- **Purity:** Purified NA is free of intact virus, nucleases, and all cellular components that interfere with RT-PCR or PCR.

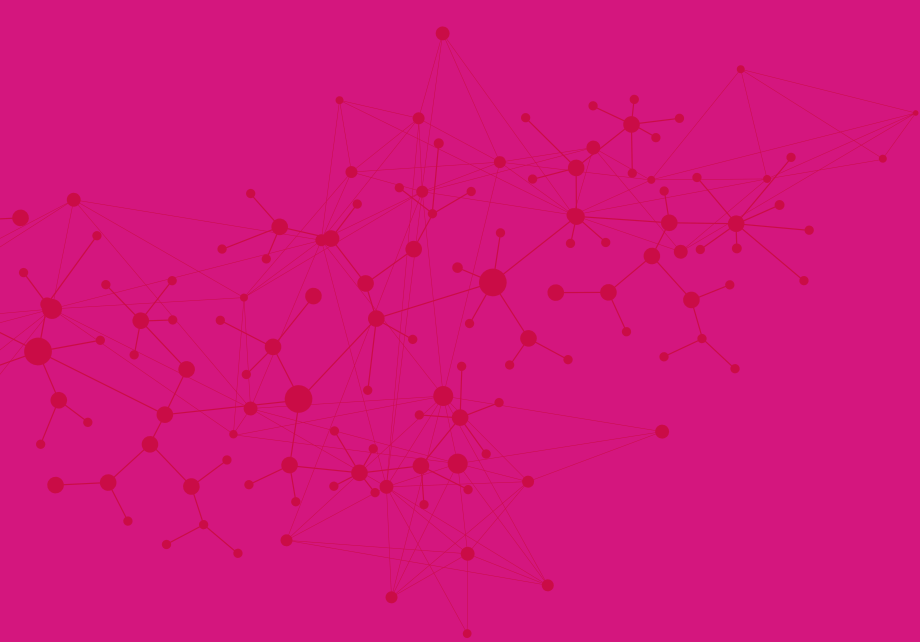
Benefits

- **Saves time**, because the kit can prepare multiple PCR/RT-PCR templates in just minutes
- **Accommodates a wide variety of samples**, because the same kit can purify nucleic acids from either DNA or RNA viruses
- **Minimizes loss of nucleic acids**, because the kit removes contaminants without precipitation, solvent extraction, or other handling steps that can lead to lost or degraded nucleic acids
- **Increases lab safety**, because the kit minimizes the handling of potentially hazardous samples and does not use hazardous organic solvents

Cat	Products	Reactions
A0018	High Efficient Viral DNA /RNA Isolation Kit	50
A0030	High efficient total Viral/Tissue DNA Isolation Kit	50

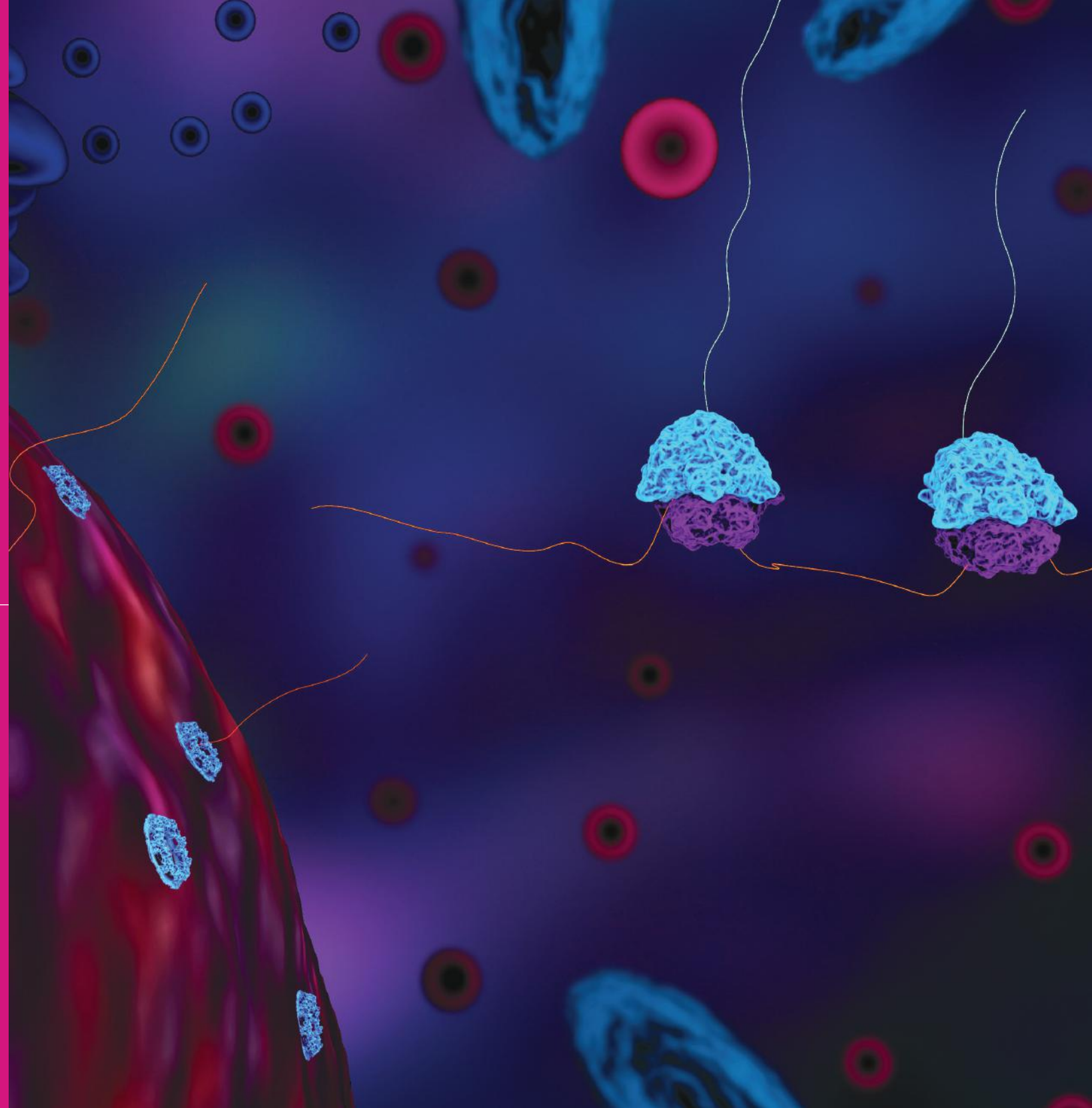


No.	C	Name	Type	Ct
1		sample	Positive C	13.05
2		ntc	NTC	



07

RNA Isolation Kits



RNA Isolation Kit

Principle

A single reagent lyses the sample and inactivates RNase. In the presence of a chaotropic salt, the released total RNA binds selectively to glass fiber fleece in a special centrifuge tube. The RNA remains bound while a DNase treatment and a series of rapid “wash-and-spin” steps remove DNA and contaminating small molecules. Finally, low salt elution removes the RNA from the glass fiber fleece. The process does not require precipitation, organic solvent extractions, or extensive handling of the RNA.

Starting material

- 10⁶ cultured mammalian cells (research samples)
- 200 – 500 µl human whole blood (research samples), containing anticoagulant
- 10⁸ yeast (mid- to late-log phase, A₆₀₀ <2.0)
- 10⁹ gram positive or gram negative bacteria
- 25-50 mg tissue

Application

- Preparation of intact total RNA, which may be used directly in RT-PCR, Differential Display RT-PCR (DDRT-PCR), Northern blotting, primer extension assays, RACE (rapid amplification of cDNA ends), cDNA library construction, in vitro translation, or nuclease protection assays.

Time required

- Total time: approx. 20 min (+ sample pretreatment, if needed)

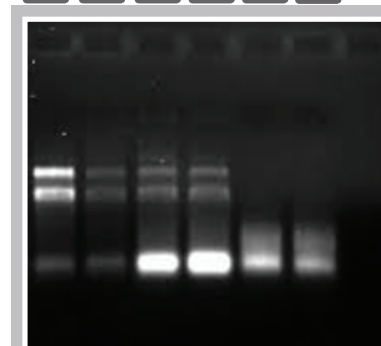
Results

- Yield: Variable, depending on sample type
- Purity: Purified RNA is free of DNA, protein, salts, and other cellular components

Benefits

- Saves time**, because the kit can produce multiple RNA samples in minutes
- Ideal for a wide variety of samples**, because one kit can purify RNA from many sources
- Minimizes RNA loss**, because the kit removes contaminants without time-consuming precipitation or solvent extraction
- Increases lab safety**, because the kit does not use hazardous organic solvents

1 2 3 4 5 6



RNA Extraction with PayeshGene Kit

- Cultured cells (CHO-k1)
- Whole blood, human
- Bacteria (E. coli)
- Mouse tail
- Yeast (S. cerevisiae)
- Bacteria (B. subtilis)

Typical RNA yield from different organisms (research samples)

Starting material	Sample size	Average RNA yield (µg)
Cultured cells (CHO-k1)	10 ⁶	10-12
Whole blood, human	200-500µl	8-10 RT-PCR
Yeast (S. cerevisiae)	10 ⁸	10-13
Bacteria (E. coli)	10 ⁹	10-15
Bacteria (B. subtilis)	10 ⁹	10-12
Mouse tail	25	0.5-1

Cat	Products	Reactions
B001	High Efficient BLOOD / Cell Cultured Total RNA Isolation Kit	50
B002	High Efficient Bacterial /Yeast Total RNA Isolation Kit	50
B003	High Efficient Tissue Total RNA Isolation Kit	50

