STI 13-Pathogen Lyophilized Nucleic Acid Detection Kit (Fluorescence PCR)

Product Introduction

Sexually Transmitted Diseases (STDs), also known as Sexually Transmitted Infections (STIs), are diseases transmitted through sexual activities, similar behaviors (such as genital friction), and indirect contact (such as using a towel belonging to an infected individual).More than 30 different bacteria, viruses and parasites are known to be transmitted through sexual contact, including vaginal, anal and oral sex. Some STIs can also be transmitted from mother-to-child during pregnancy, childbirth and breastfeeding.

A wide range of pathogens can cause sexually transmitted infections (STIs), including viruses, chlamydia, mycoplasmas, spirochetes, bacteria, fungi, and protozoa. The symptoms, severity, and impact of STIs vary depending on the pathogen. Some of the most impactful pathogens include Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Mycoplasma genitalium (Mg), Treponema pallidum (TP), Herpes Simplex Virus types 1 and 2 (HSV1 and HSV2), Ureaplasma urealyticum (UU), Mycoplasma hominis (MH), Gardnerella vaginalis (GV), Trichomonas vaginalis (TV), Haemophilus ducreyi (HD), Ureaplasma parvum (UP), and Candida albicans (CA). According to WHO estimates, around 374 million new cases of chlamydia, gonorrhea, syphilis, and trichomoniasis were reported among those aged 15 to 49 in 2020. In 2022, approximately 8 million adults were infected with syphilis, and over 500 million people worldwide aged 15 to 49 were living with genital herpes.

STIs contribute to stigma, infertility, cancer, and pregnancy complications, directly affecting sexual and reproductive health and increasing the risk of HIV infection. Thus, testing for 13 STI pathogens in male urethral and female cervical swab samples is crucial. This kit is designed for detecting 13 common STI pathogens, including Chlamydia trachomatis, Neisseria gonorrhoeae, and Mycoplasma genitalium, to screen samples for the presence of STI pathogens.

Principle

This kit is designed to qualitatively detect 13 STI pathogens by targeting relatively conserved regions within each pathogen's genome, using specific primers and probes. The assay combines Polymerase Chain Reaction (PCR) with Taqman fluorescent probe technology for accurate identification. Each primer-probe set binds specifically to its target sequence, ensuring no cross-reactivity. Additionally, the human RNase P gene serves as a non-competitive internal control, monitoring the entire extraction and detection process and reducing false negatives. The kit comes pre-mixed with all necessary components, Lyophilized in eight-strip tubes, ready to use without thawing or additional preparation. This simplifies the workflow, saving time and effort. This kit offers a streamlined, fluorescent quantitative PCR solution for rapid detection of 13 STI pathogens in male urethral and female cervical swabs.

Product Features

High Accuracy

Effectively detects nucleic acids of 13 STI pathogens, providing results that meet expected standards.

High Specificity

No cross-reactivity with Group B Streptococcus, HPV, Salmonella, CMV, EBV, or HHV-6.

Controls included

Includes a non-competitive endogenous control to monitor the entire process.

Ease of Use

Pre-portioned, Lyophilized format requires only the addition of nucleic acids for testing.

Product Specifications

Parameters	Descriptions
Sample Type	Male urethral swabs and female cervical swabs
Targets	Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Mycoplasma genitalium (MG), Treponema pallidum (TP), Herpes simplex virus 1 (HSV-1), Herpes simplex virus 2 (HSV-2), Ureaplasma urealyticum (UU), Mycoplasma hominis (MH), Gardnerella vaginalis (GV), Trichomonas vaginalis (TV), Haemophilus dacrya (HD), Ureaplasma parvum (UP), Candida albicans (CA).
Internal Control	Human RnaseP gene
LOD	CT, NG, UU: 1×10^3 copies/mL; MG, TP, HSV-1, HSV-2, MH, GV, TV, HD, UP, CA: 200 copies/mL
Precision	CV≤5%
Specificity	No cross reactivity has been observed by testing the clinical positive specimens such as Group B streptococcus, human papilloma virus, Salmonella, Pseudomonas aeruginosa, Escherichia coli, Human cytomegalo virus, Epstein-Barr virus, Human herpes virus type 6, Pneumonia mycoplasma, Bordetella pertussis, Staphylococcus aureus, and Adenovirus.
Compatible Instruments	LineGene 9600, QuantGene 9600, ABI QuantStudio series, ABI 7500 Real-Time Quantitative PCR System
Recommended Extraction Kits	BSC71 MagaBio plus Virus DNA/RNA Purification Kit II BSC86 MagaBio plus Virus DNA/RNA Purification Kit III BSC110 MagaBio plus Virus DNA/RNA Purification Kit VI
Turnaround time	60 min
Formats	Lyophilized
Storage Conditions	-25°C~8°C away from light

Application Cases

Case 1

Low-concentration samples containing 13 STI pathogens were repeatedly tested using this kit, with a coefficient of variation (CV) of Ct values less than 2%. This indicates that the kit has excellent reproducibility, providing stable and reliable results for the same sample. The detection results are as follows:

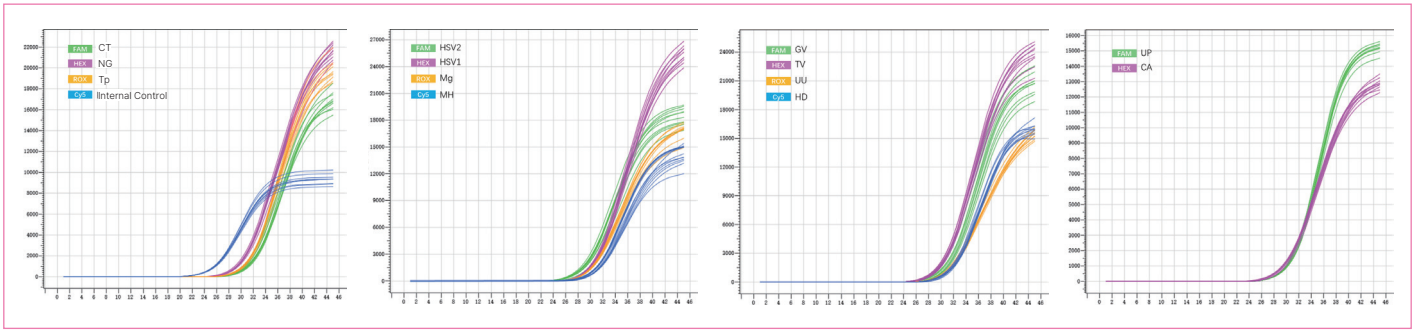

Fig.1. Reproducibility Verification Experiment for 13 STI Pathogen Samples

Case 2

A cross-reactivity test was conducted using the kit on the following pathogens: Group B Streptococcus, Human Papillomavirus (HPV), Salmonella, Pseudomonas aeruginosa, Escherichia coli, Cytomegalovirus (CMV), Epstein-Barr Virus (EBV), Human Herpesvirus 6 (HHV-6), and 13 STI pathogens (Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Mycoplasma genitalium (Mg), Treponema pallidum (TP), Herpes Simplex Virus Type 1 (HSV1), Herpes Simplex Virus Type 2 (HSV2), Ureaplasma urealyticum (UU), Mycoplasma hominis (MH), Gardnerella vaginalis (GV), Trichomonas vaginalis (TV), Haemophilus ducreyi (HD), Ureaplasma parvum (UP), Candida albicans (CA)).

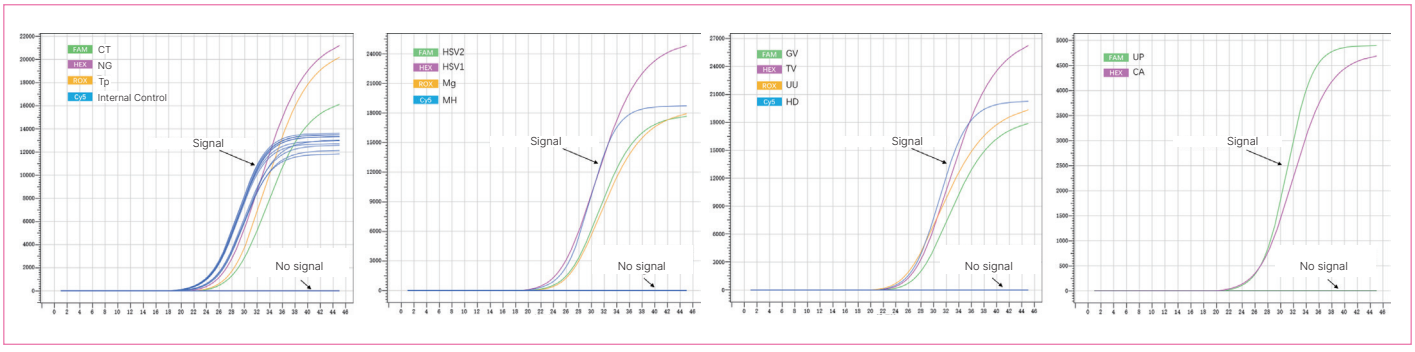

Fig. 2. Cross-Reactivity Validation Experiments

Results: Results showed no amplification signals for non-STI pathogens, while the 13 STI pathogens were successfully detected. This confirms that the kit exhibits no cross-reactivity with other pathogens, demonstrating excellent specificity.

Ordering Information

Product Name	Cat. No.	Package	Storage Condition
STI 13-Pathogen Lyophilized Nucleic Acid Detection Kit (Fluorescence PCR)	BSJ61M1/BSJ61L1	48T/96T	-25°C~8°C away from light

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