STI-6 Nucleic Acid Detection Kit (Fluorescence PCR)

Product Introduction

Sexually transmitted diseases (STDs), also known as sexually transmitted infections (STIs), are primarily spread through sexual contact, including vaginal, oral, and anal sex, as well as close genital contact such as genital rubbing. In some cases, indirect transmission can occur through contaminated personal items like towels. A wide range of pathogens can cause STIs, including viruses, chlamydia, mycoplasma, spirochetes, bacteria, fungi, and protozoa.

Among these, certain pathogens are associated with more severe symptoms and greater health risks. These include Herpes Simplex Virus type I (HSV-1) and type II (HSV-2), Treponema pallidum (TP), Haemophilus ducreyi (HD), Gardnerella vaginalis (GV), and Candida albicans (CA). Molecular detection of these pathogens is essential for early diagnosis, accurate treatment, and infection control, especially because many STIs can be asymptomatic in early stages yet still transmissible and harmful.

STIs can lead to social stigma, infertility, pregnancy complications, and even certain cancers. They also significantly increase the risk of acquiring HIV. According to the World Health Organization (WHO), an estimated 8 million adults worldwide were infected with syphilis in 2022, and approximately 700,000 cases of congenital syphilis were reported. In addition, over 500 million people aged 15–49 are currently living with genital herpes. These figures highlight the urgent need for widespread screening and molecular diagnostic tools to manage and control the global burden of STIs.

Principle

This reagent kit utilizes specific primers and TaqMan probes designed based on relatively conserved regions within the genomes of six common sexually transmitted infection (STI) pathogens. Detection is performed through polymerase chain reaction (PCR) combined with fluorescence-based TaqMan probe technology, enabling qualitative identification of each pathogen. The primer–probe sets are highly specific to their respective target sequences, ensuring no cross-reactivity.

To ensure the reliability of the entire extraction and amplification process, the human RNaseP gene is incorporated as a non-competitive internal control, effectively minimizing the risk of false-negative results. The assay is optimized for rapid and accurate detection of the six STI pathogens in male urine, urethral swabs, female urine, and cervical swabs using real-time PCR.

Product Features

All-in-One Premix

Ready-to-use master mix requires only the addition of sample, significantly reducing hands-on time and minimizing manual errors.

Contamination Control

Incorporates a dUTP/UDG system to effectively prevent carryover contamination between reactions.

Excellent Specificity

No cross-reactivity observed with non-target pathogens, including Group B Streptococcus, Human Papillomavirus (HPV), Salmonella spp., Human Cytomegalovirus (HCMV), Epstein–Barr Virus (EBV), and Human Herpesvirus 6 (HHV-6).

High Accuracy

Reliably detects nucleic acids of six common STI pathogens with high concordance to expected results.

Product Specifications

Parameters	Descriptions
Sample Type	Male urine, urethral swab, female urine, and cervical swab
Internal control Gene	Human RNaseP gene
UDG	Yes
Pathogen	Herpes Simplex Virus type I (HSV-1) and type II (HSV-2), Treponema pallidum (TP), Haemophilus ducreyi (HD), Gardnerella vaginalis (GV), and Candida albicans (CA)
LOD	200 copies/mL
Precision	Inter-batch, intra-batch, inter-day, and intra-day coefficient of variation < 2%
Accuracy	Capable of accurately detecting six common STI pathogens
Specificity	No cross-reactivity with HPV, Ebola virus, etc.
Recommended Purification Kit	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
Compatible Platforms	LineGene 9600, QuantGene 9600, FQD-A1600, FQD-A9600, ABI7500, ABI QuantStudio Series Real-Time PCR System
Detection Time	1 hour
Storage Conditions	Store at -20 ± 5°C, protected from light

Performance Data

Low-concentration samples containing nucleic acids of the six STI pathogens were repeatedly tested using the STI Multiplex Pathogen Detection Kit. The coefficient of variation (CV) of the Ct values was less than 2%, demonstrating excellent reproducibility. The kit provides stable and reliable results for repeated detection of the same sample. The results are shown below:

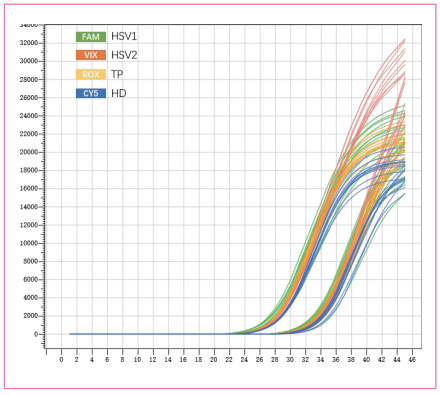

Figure 1. Data of 10 technical replicates of tube 1 show excellent reproducibility.

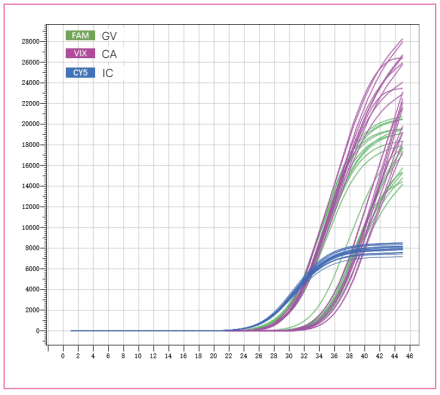

Figure 2. Data of 10 technical replicates of tube 2 show excellent reproducibility.

	FAM	VIC	ROX	CY5
1	33.72	34.18	34.5	34.84
2	33.35	34.03	34.28	34.6
3	33.65	34.65	34.05	34.33
4	33.22	34.48	35.03	35.65
5	33.47	34.71	34.79	35.31
6	33.97	34.13	34.3	34.82
7	35.51	34.41	34.3	34.53
8	34.48	34.23	33.94	34.44
9	33.63	34.15	34.48	34.72
10	34.12	34.93	33.77	34.28
CV%	1.99%	0.86%	1.11%	1.25%

Cross-reactivity validation was performed by testing various pathogens, including Group B Streptococcus, Human Papillomavirus (HPV), Salmonella spp., Pseudomonas aeruginosa, Escherichia coli, Human Cytomegalovirus (HCMV), Epstein–Barr Virus (EBV), and Human Herpesvirus 6 (HHV-6) using the STI Multiplex Pathogen Detection Kit. Amplification signals were observed only for the STI six-pathogen targets, with no amplification detected for other pathogens, confirming that the kit does not exhibit cross-reactivity and demonstrates excellent specificity.

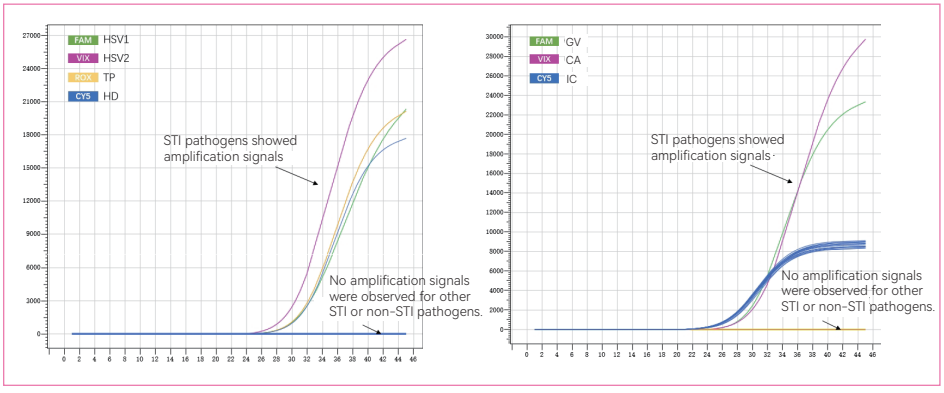

Figure 3.Cross-reactivity tests show that amplification signals are only observed for target pathogens while no signal can be observed for other pathogens.

Ordering Information

Product Name	Cat. No.	Package	Storage Condition
STI-6 Nucleic Acid Detection Kit (Fluorescence PCR)	BSJ75M1/BSJ75L1	48T/96T	-20 ± 5°C, protected from light

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