

***Clostridium butyricum* qPCR Detection Kit (TBS42064)**

Single-Tube Probe-Based qPCR Kit for Detection of Clostridium butyricum

Catalog Number
TBS42064-100
TBS42064-200

Kit Size
100 assays
200 assays

DESCRIPTION

Clostridium butyricum is a species of gram-positive, anaerobic, spore-forming bacterium. It is commonly found in soil, water, and the gastrointestinal tract of humans and animals. Its detection is critical for quality control, contamination monitoring, and scientific research. Tribioscience *Clostridium butyricum* qPCR Detection Kit is specifically used to detect *Clostridium butyricum* species in a single real-time quantitative PCR (qPCR) reaction using fluorescent probes. Detection of the target DNA confirms ingredient authenticity and helps prevent food fraud to ensure food safety.

PRINCIPLE

The kit is based on probe real-time qPCR technology, which amplifies specific gene sequence of *Clostridium butyricum*. Target-specific fluorescent probes bind to the amplified PCR products. As the products accumulate, the fluorescence signal increases in PCR amplification. By monitoring fluorescence intensity in real time, the kit allows the quantitative detection of the target DNA during the PCR run and provides rapid and accurate results.

KEY FEATURES

- High sensitivity for *Clostridium butyricum*.
- High efficiency: the optimal systemic conditions for PCR amplifications.
- Streamlined protocol: just add DNA Template and water.
- No cross reactivity with other species.

APPLICATIONS

qPCR detection of *Clostridium butyricum* is used in food and environmental, fermentation process control, spoilage prevention, and microbial ecology studies to rapidly and specifically quantify the bacteria.

KIT CONTENTS

Name	100x rxn	200x rxn
qPCR Super Mix (B1)	0.9 mL	1.8 mL
Primer-probe Mix (B2)	0.5 mL	1.0 mL
Positive Control DNA (B ⁺)	10 µL	20 µL
Negative Control DNA (B ⁻)	60 µL	120 µL

The *Clostridium butyricum* target probe has been labeled with **FAM** while the PCR internal control has been labeled with **Hex**.

STORAGE CONDITION

The kit is shipped on ice and stored at -20°C for long-term storage. Shelf life of 12 months after receipt.

PCR PROTOCOL

1. Standard Control DNA Preparation: The Positive Control DNA is 100 ng/µL in the kit. Add 4 µL Positive stock to 16 µL nuclease-free water in tube#1, then perform 6 serial dilutions of the Standard Control DNA at 10-fold manner by diluting 2 µL Standard DNA into next 18 µL Nuclease-Free water in each tube as Fig. 1. Dilutions in tube 1-7 will be used for generating the standard curve.

Fig.1: DNA Standard Preparation

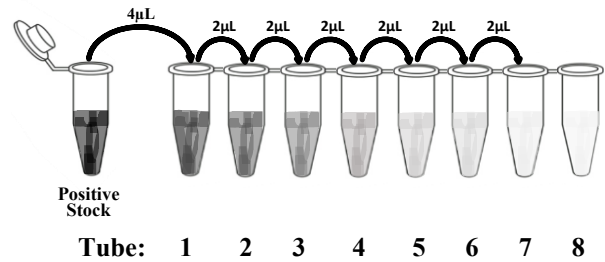


Table 1: DNA Standard Concentration:

Tube	Positive control (ng/µL)
1	20
2	2
3	0.2
4	0.02
5	0.002
6	0.0002
7	0.00002
8	0

Note: if you do not need standard curve, just use tube 1 of dilution Positive Stock as a single positive control (20 ng/µL) and 5 µL/reaction.

2. Set up PCR reaction for each sample in 20µL

Reaction Component	Volume (µL)
qPCR Super Mix (B1)	9.0
Primer-probe Mix (B2)	4.0
Nuclease-free Water	2.0
DNA sample	5.0
Final Volume	20µL

Positive Control (5µL/reaction) Negative Control (5µL/reaction) should be included in PCR amplification.

3. Suggested PCR conditions

Step	PCR Amplification		
	HOLD	CYCLE (40x cycles)	
		Denature	Anneal/ Extend
Temperature	94°C	94°C	60°C
Time	1 min	10 sec	1min

DATA ANALYSIS

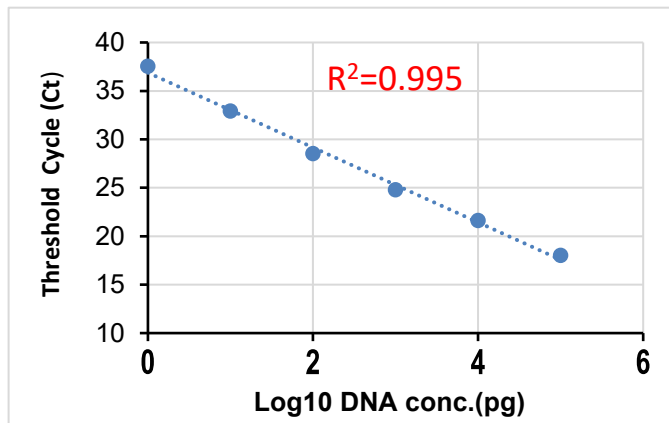
Positive Reaction: Sample Ct ≤ 37, w/ Positive, Negative and Blank controls normal.

Negative Reaction: Sample Ct > 37, w/ Positive, Negative and Blank controls normal.

PCR internal control is positive in all samples, positive and negative controls. The positive response indicates a normal PCR amplification. Otherwise, the PCR reaction may be inhibited.

Repeat Reaction: If one of the control reactions is not normal, PCR reaction fails and should be repeated.

Fig.2: DNA Standard Curve



RELATIVE PRODUCTS

- TBS6025: Microbial DNA Magnetic Extraction
- TBS6039: Dead Bacterial Eraser Kit
- TBS42026: O157H7 E. Coli qPCR
- TBS42014: Arabis Mosaic Virus RT-qPCR Detection System
- TBS42015: Hop Latent Viroid RT-qPCR Detection System
- TBS42021: Aspergillus Flavus qPCR
- TBS42022: Aspergillus Fumigatus qPCR
- TBS42023: Aspergillus Niger qPCR
- TBS42024: Aspergillus Terreus qPCR
- TBS42025: 4-In-1 Aspergillus qPCR
- TBS42027: STEC qPCR
- TBS42028: Salmonella qPCR
- TBS42029: STEC and Salmonella Multiple qPCR
- TBS42031: Listeria Monocytogenes qPCR
- TBS42032: Listeria Species qPCR
- TBS42033: Bacillus Cereus qPCR
- TBS52050: Staphylococcus – Pseudomonas Multiple qPCR
- TBS42051: E. Cole Salmonella Multiple qPCR
- TBS42065: Pediococcus app. qPCR
- TBS42066: Pediococcus damnosus qPCR

For research use only.

Fig.3: DNA Standard Amplification

