

**Catalog Number**

TBS42065-100  
TBS42065-200

**Kit Size**

100 assays  
200 assays

**DESCRIPTION**

*Pediococcus* spp. are gram-positive, catalase-negative, facultative anaerobic lactic acid bacteria. *Pediococcus* species are commonly found in food and beverage fermentation, and their detection is critical for quality control, contamination monitoring, and scientific research. The Tribioscience *Pediococcus* spp. qPCR Detection Kit is specifically designed to detect *Pediococcus* genus 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 conserved gene sequences of *Pediococcus* species. The target-specific fluorescent probes bind to the amplified PCR products, and 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 amplification and provides rapid and accurate results.

**KEY FEATURES**

- High sensitivity and specificity for all *Pediococcus* species.
- 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 *Pediococcus* spp. is used in food and beverage production, 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 <sup>+</sup> )	10 µL	20 µL
Negative Control DNA (B <sup>-</sup> )	60 µL	120 µL

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

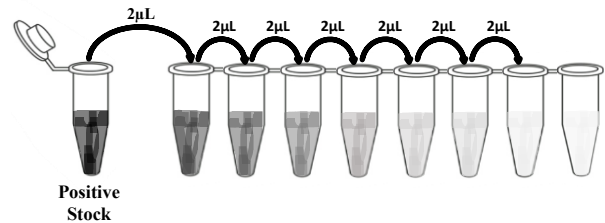
**STORAGE CONDITION**

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 Stock is 200 ng/µL in the kit. Perform 7 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 concentration as Fig. 1. Dilutions 1/10 to 1/10000000 will be used for generating the standard curve.

**Fig.1: DNA Standard Preparation**



**Table1: DNA Standard Concentration:**

Dilution	Positive control (ng/µL)
1/10	20
1/100	2
1/1000	0.2
1/10000	0.02
1/100000	0.002
1/1000000	0.0002
1/10000000	0.00002
Negative	0

Note: if you do not need standard curve, just use 1/10 dilution of Positive Stock as a positive control (20 ng/uL) and 5µL/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
<b>Final Volume</b>	<b>20µL</b>

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
<b>Temperature</b>	95°C	95°C	60°C
<b>Time</b>	1 min	10 sec	1min

**DATA ANALYSIS**

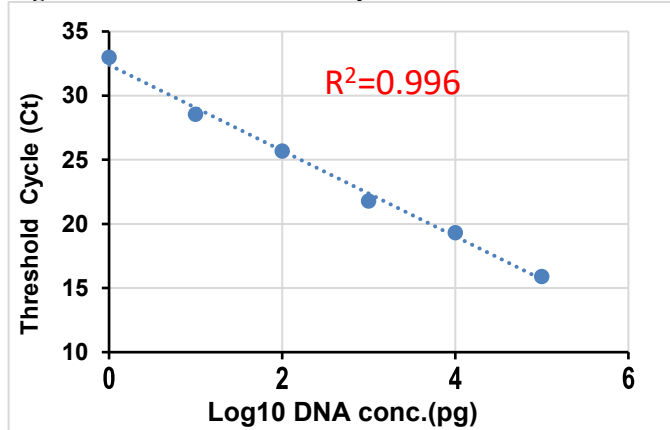
Positive Reaction: Sample Ct ≤ 37, w/ Positive, Negative and Blank controls normal.

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

PCR internal control Hex signal 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 PCR amplification**



**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

**For research use only.**

**Fig.3: DNA Standard Curve**

