

Catalog Number	Kit Size
TBS42001-100	100 assays
TBS42001-200	200 assays

DESCRIPTION

The Bovine QPCR Kit is designed for the target-DNA specific detection of bovine matter in food and animal feed ingredients. The assay uses a real-time PCR-based protocol with fluoresce-probe to detect target DNA. It can detect as few as 10 copies of the target DNA in a reaction and it exhibits high specificity for bovine (Fig.1-2, and Table 1). No cross reactivity is observed with other animal species (See Table 2). The detection of target DNA confirms ingredient authenticity or prevents food fraud, ethical issues, or health concerns.

PRINCIPLE

Authenticating ingredients using real-time PCR is based on the amplification of a specific region of the relevant target genome. The amplified product is detected using target-specific fluorescent probes that bind to the amplified product. As the PCR product accumulates, there is an increased fluorescent signal from the bound probes. Monitoring the fluorescence intensities during the PCR run allows the detection of the accumulating PCR product in real time.

The Bovine qPCR Kit include bovine positive and negative Controls, and PCR internal controls, qPCR super mix, prime-probe mix, in which the probe is labeled with FAM for bovine DNA target, and Hex is labeled for PCR internal control. These aids in the straightforward interpretation of the results.

KEY FEATURES

- ❖ Highly sensitive and specificity for bovine derived DNA.
- ❖ High efficiency: the optimal systemic conditions for PCR amplifications.
- ❖ Streamlined protocol: just add DNA template, and water.
- ❖ No cross reactivity with other species.

APPLICATIONS

Detect Bovine derived DNA in food, and animal feed.

KIT CONTENTS

Name	100RXN	200RXN
qPCP Super Mix	0.9 mL	1.8 mL
Primer-probe Mix	0.6 mL	1.2mL
Positive Control DNA	60 µL	120 µL
Negative Control DNA	60 µL	120 µL

The Bovine DNA probe is labeled with **FAM**, and PCR internal control is 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. Set up PCR reaction for each sample in 25 µL

Reaction Component	Volume (µL)
qPCP Super Mix	8.0
Primer-probe Mix	5.0
DNA sample	5.0
Nuclease-free Water	7.0
Final Volume	25 µL

Internal control should be included as below: Positive Control (5 µL /reaction), or Negative Control (5 µL/reaction)

2. Suggested PCR conditions

Step	Amplification	PCR	
	HOLD	CYCLE (40 cycles)	
		Denature	Anneal/ Extend
Temperature	95 °C	95 °C	60 °C
Time	1 min	10 sec	60 sec

DATA ANALYSIS

Positive Reaction: Sample Ct < or = 37 , and Positive, Negative and Blank controls are normal.

Negative Reaction: Sample Ct ≥ 38, and Positive, Negative and Blank controls are 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 is failed, and should be repeated.

Fig. 1: Bovine qPCR Amplification

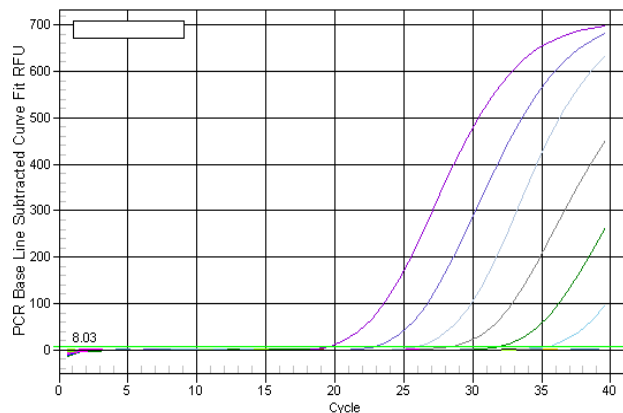
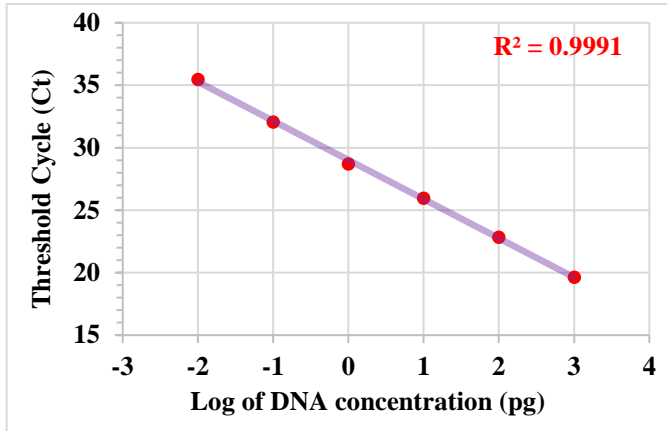


Table1. Bovine qPCR Sensitivity Data

Bovine DNA (pg)	Threshold Cycle (Ct)
1x10 ³	19.64
1x10 ²	22.85
1x10 ¹	25.97
1x10 ⁰	28.70
1x10 ⁻¹	32.07
1x10 ⁻²	35.47
1x10 ⁻³	N/A
Negative	N/A

Fig.2: DNA Concentration and qPCR amplification



RELATIVE PRODUCTS

- TBS6008: Fast Genomic DNA Extraction
- TBS6025: Microbial DNA Magnetic Extraction
- TBS42002: Goat qPCR Detection
- TBS42005: Chicken qPCR Detection
- TBS42026: O157H7 E. Coli qPCR
- TBS42027: STEC qPCR
- TBS42028: Salmonella qPCR
- TBS42029: STEC and Salmonella Multiple qPCR
- TBS42030: Mycoplasma Detection qPCR
- TBS42031: Listeria Monocytogen qPCR
- TBS42032: Listeria Genus qPCR
- TBS42033: Bacillus Cereus qPCR
- TBS 42020: Universal Aspergillus qPCR
- TBS42021: Aspergillus Flavus qPCR
- TBS42022: Aspergillus Fumigatus qPCR
- TBS42023: Aspergillus Niger qPCR
- TBS42024: Aspergillus Terreus qPCR

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Table2: Cross-reactivity Survey

Species	Result	Species	Result
Bovine	+	Deer	-
Water buffalo	-	Cod	-
Turkey	-	Salmon	-
Chicken	-	Rabbit	-
Goose	-	Corn	-
Duck	-	Soy	-
Pig	-	Rice	-
Sheep	-	Wheat	-
Goat	-	Potato	-
Horse	-		