

Microbial detection

TaqPath BactoPure Microbial Detection Master Mix

Product overview

The Applied Biosystems™ TaqPath™ BactoPure™ Microbial Detection Master Mix is optimized for rapid low-level microbial detection even in the presence of inhibitors.

This general-purpose reagent (GPR) is labeled “For Laboratory Use” and is manufactured in an ISO 13485*-certified and FDA-registered facility, which adheres to the principles of current good manufacturing practices (cGMPs).

All lots are functionally tested to help ensure lot-to-lot reproducibility for C_t consistency and dynamic range across a wide variety of assays.

For clinical, biotech/biopharma, and research customers who need a rapid method for low-level microbial detection for a variety of targets in complex samples, we offer the TaqPath BactoPure Microbial Detection Master Mix.

- Low limit of detection across common microbial targets of interest (e.g., bacteria as demonstrated by a 16S rRNA assay)
- Premier reagents for biologics quality control (QC) and clinical assays

Benefits of the TaqPath BactoPure Microbial Detection Master Mix:

- **Low-level detection** of bacterial, fungal, mammalian, viral DNA, and antibiotic resistance markers



- **Tolerance of PCR inhibitors** typically found in both purified samples and crude lysates in biopharmaceutical, molecular diagnostic, and research applications
- **Wide dynamic range**** (up to 8 orders of magnitude) enabling accurate detection from both low and high concentration samples
- **Optimized for multiplexing**—available in two formulations that enable single- to four-target detection per reaction
- **Compliance package** available at thermofisher.com/qpcr/bactopure
- **Consistent performance** across manufactured lots

TaqPath BactoPure Microbial Detection Master Mix is available in two formulations:

- TaqPath BactoPure Microbial Detection Master Mix containing ROX™ dye as a passive reference; recommended for singleplex (1 probe) to triplex reactions (3 probes)
- TaqPath BactoPure Microbial Detection Master Mix (No ROX dye), which does not contain a passive reference, and is recommended for use with assays utilizing the JUN™ (or similar emission wavelength) dye or for higher order multiplexing (>3 targets)

* This product is manufactured utilizing ISO 13485–certified quality management systems.

** Dynamic range is a property of both the assay and template concentration in the sample, as well as the formulation of the master mix; thus, individual results may vary.

Low-level detection

The TaqPath BactoPure Microbial Detection Master Mix has been optimized for highly reproducible, low-level detection from a wide variety of samples. Other mixes on the market contain contaminant DNA that impedes the ability to differentiate between target from the sample and target in raw materials of the mix (Figure 1). TaqPath BactoPure Microbial Detection Master Mix is virtually free of DNA background, and each lot is tested on a panel of assays to certify it as such prior to release. This lot-to-lot C_t consistency is preserved across multiple assays with different attributes and expression levels to maximize confidence in your results.

Tolerance of inhibitors

Unique proprietary formulation allows robust performance even in the presence of substances that can normally inhibit PCR, such as heparin, hematin, or humic acid, resulting in increased confidence when working with a variety of complex samples. The TaqPath BactoPure Microbial Detection Master Mix demonstrates increased tolerance to inhibitors compared to competitor mixes, both from purified samples and from crude lysates.

Wide dynamic range**

The TaqPath BactoPure Microbial Detection Master Mix has been validated to provide wide dynamic range (up to 8 orders of magnitude), enabling accurate detection from both low and high concentration samples. The formulation can be run in either fast or standard cycling conditions on a wide variety of qPCR platforms.

Optimized for multiplexing

The TaqPath BactoPure master mix has been validated for multiplexing up to four targets in one reaction, allowing for additional targets and/or controls to be run simultaneously for efficiency.

Shelf life

The TaqPath BactoPure master mix has a 24-month shelf life from the date of manufacture, with a guaranteed minimum shelf life of at least 1 year upon receipt; the exact expiry date is printed on the product label and lot-specific COA.

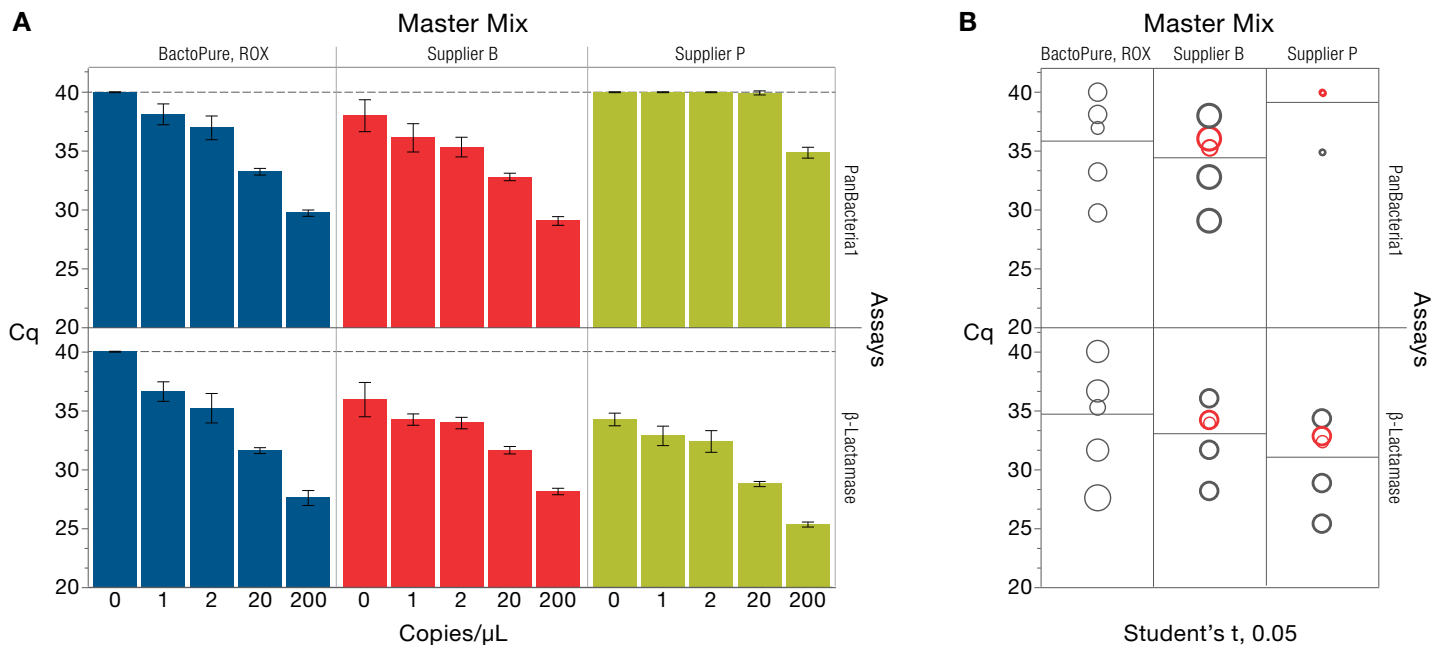


Figure 1. The TaqPath BactoPure master mix exhibits lower limit of detection (LOD) than other commercial master mixes. The LOD of the TaqPath BactoPure Microbial Detection Master Mix was compared to that of two other commercially available master mixes. For each master mix, four replicates containing varying amounts of DNA (0, 1, 2, 20, or 200 copies/μL) were amplified on an Applied Biosystems™ QuantStudio™ Real-Time PCR System using assays specific to a pan-bacterial target and antibiotic resistance marker β-lactamase. **(A)** The TaqPath BactoPure master mix (blue) was the only master mix that successfully detected and differentiated between 0 and 1 copy of DNA and between 1 and 2 copies of DNA for either assay. **(B)** The Student's t-test confirms that there is a significant difference between all the serial dilution data points for both assays when using the TaqPath BactoPure master mix (as indicated by the black circles), but not for the other commercial master mixes (as indicated by the overlapping red circles).

** Dynamic range is a property of both the assay and template concentration in the sample, as well as the formulation of the master mix; thus, individual results may vary.

General purpose reagent labeled “For Laboratory Use”

TaqPath BactoPure master mixes are general purpose reagents labeled “For Laboratory Use” and manufactured in an ISO 13485–certified and FDA-registered facility.

Compliance package can be found at thermofisher.com/qpcr/bactopure

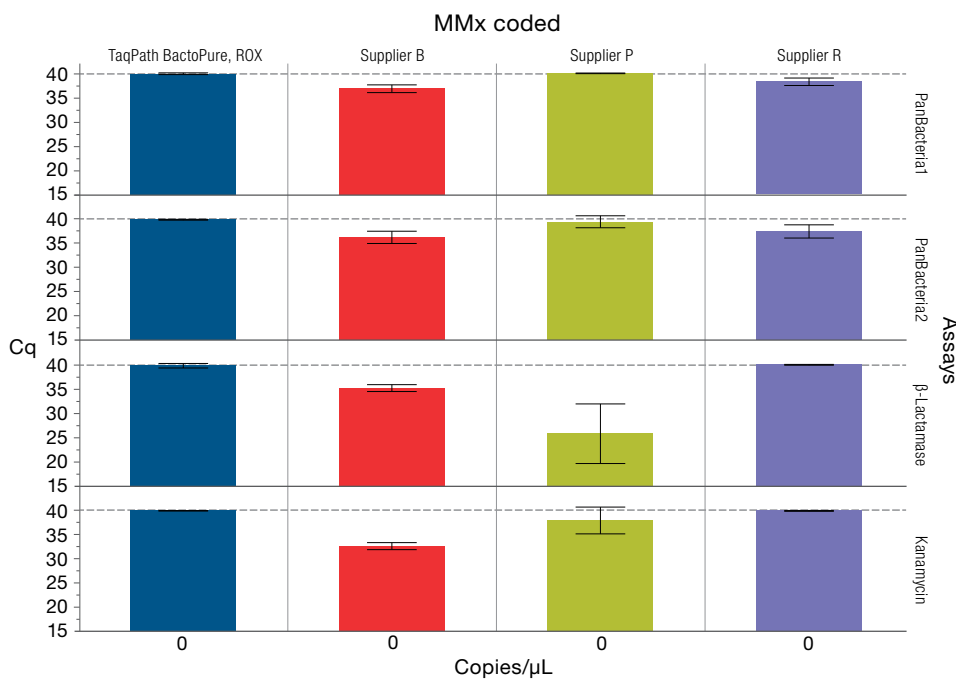


Figure 2. Background DNA levels detected in other commercial master mixes but not in the TaqPath BactoPure master mix.

The background DNA levels in the TaqPath BactoPure Microbial Detection Master Mix was compared to that of three other commercially available master mixes. For each master mix, four replicates of the no-template control (NTC) were amplified for 40 cycles on the QuantStudio Real-Time PCR System using assays specific to pan-bacterial targets and antibiotic resistance markers (β -lactamase and kanamycin). BactoPure Master Mix (blue) consistently reached the maximum C_q value of 40 across assays, indicating no DNA contaminants were present for amplification. Supplier B master mix (red) showed amplification across all four targets, while Supplier P (green) and Supplier R (purple) master mixes each showed amplification of 2 targets, indicating varying levels of DNA background.

PCR option†	Compatible reporter dyes	Recommended master mix formulation
Singleplex (1 probe)	FAM, VIC, ABY	TaqPath BactoPure Microbial Detection Master Mix with ROX dye
Multiplex (2–3 probes)		
Multiplex (≥ 3 probes)	JUN, FAM, VIC, ABY	TaqPath BactoPure Microbial Detection Master Mix (No ROX dye)

† For detailed information about multiplex reactions, see the TaqMan™ Assay Multiplex PCR Optimization User Guide (Pub. No. MAN0010189).

Ordering information

Product	Quantity	Cat. No.
TaqPath BactoPure Microbial Detection Master Mix (ROX dye)	1 mL	A52699
	5 mL	A52700
	5 x 1 mL	A52701
	50 mL	A52702
TaqPath BactoPure Microbial Detection Master Mix (no ROX dye)	1 mL	A52703
	5 mL	A52704
	5 x 1 mL	A52705
	50 mL	A52706

Learn more or request a sample at
thermofisher.com/qpcr/bactopure

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