# Bacterial and Fungal DNA Amplification

DNA Polymerases and Optimized Master mix

**Suitable applications**

- Food Testing
- Water Testing
- Environmental
- Human Diagnostics
- Vet Health
- DNA Barcoding



PCR amplification for the detection of fungal and bacterial nucleic acids offers greater sensitivity over current culture-based methods, the potential for multiplex analysis, and can be applied to a variety of specimen types. However, trace amounts of residual bacterial and fungal DNA can be found in commercially available PCR reagents which can cause contamination and non-specific amplification. The most effective strategy to reduce false-positive reactions due to residual DNA contamination is to use reagents with low DNA content and low bioburden.

## DNA Polymerases

### Low DNA Taq

- Heat-activated thermostable DNA polymerase
- Convenient room-temperature reaction set-up
- Ideal for bacterial and fungal detection assays
- Proven performance in commercial high-throughput and high-multiplex assays

| PRODUCT | CAT NO. | VOLUME | REACTIONS |
|---|---|---|---|
| Low DNA Taq HS 5 U/µL | MDX009 | 100 µL | 500 Units |
| | | 10 mL | 50,000 Units |
| Low DNA Taq HS 10 U/µL | MDX010 | 50 µL | 500 Units |
| | | 5 mL | 50,000 Units |

# Optimized qPCR Master Mix

## Low DNA qPCR Mix

- 2x Mastermix containing a heat-activated thermostable DNA polymerase and optimized buffer
- Robust performance and high tolerance to common PCR inhibitors
- Extended stability at ambient temperature
- Ideal for high-multiplex reactions

| PRODUCT | CAT NO. | VOLUME | REACTIONS |
|---|---|---|---|
| Low DNA qPCR Mix | MDX030 | 5 mL | 500 Rxn |
| | | 100 mL | 10,000 Rxn |

# General Reagents

| PRODUCT | CAT NO. | VOLUME | REACTIONS |
|---|---|---|---|
| **qPCR controls** | | | |
| Internal control designed to closely mimic test samples. Can be used to validate the extraction step and monitor any co-purification of PCR inhibitors. Controls are available with different dyes to fit with existing protocols. | | | |
| qPCR Extraction Control RED (Quasar® 670) | MDX026 | 10 mL | 2,000 Rxn |
| qPCR Extraction Control ORANGE (Cal Fluor® 560) | MDX027 | 10 mL | 2,000 Rxn |
| **General Reagents** | | | |
| Uracil DNA Glycosylase (UDG)<br>Enzyme that efficiently hydrolyzes uracil from ssDNA or dsDNA. Endonuclease, exonuclease, nickase and RNase-free | MDX054 | 10 mL | 10,000 Units |
| Proteinase K Solution<br>RNase and DNase free, ideal for removing endogenous nucleases when purifying native DNA or RNA | MDX055 | 25 mL | 500 mg |
| RNase Inhibitor<br>Inhibits a broad spectrum of eukaryotic RNases, including RNases A, B and C to control for contaminants in RT-PCR assays | MDX056 | 250 µL | 10,000 Units |
| | | 2.5 mL | 100,000 Units |
| Tissue Extract-PCR Buffers<br>Lysis and neutralization buffers optimized for use with Taq HS DNA Polymerase (Cat# MDX008) to perform PCR direct from crude lysate | MDX004 | 1 Kit | 1,000 Rxn |

**Ultra-pure (>99% determined by HPLC) dNTPs supplied as lithium salts are also available. They are sold individually (100mM), in sets (100mM) or as mixes (40mM and 100mM).**


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