SPECIALTY ENZYMES

Specialty Enzyme Product Listing

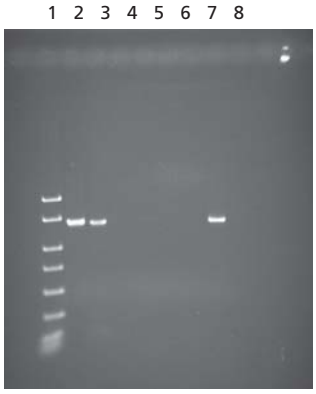
Restorase® DNA Polymerase

Restorase DNA Polymerase with 10X Reaction Buffer combines Sigma's long and accurate enzyme technology with a DNA repair enzyme. The resulting enzyme blend facilitates repair and extends amplification of damaged DNA. DNA templates can be compromised when damaged by exposure to acid, alkylating agents, heat or light. These damages block the amplification of DNA, thereby affecting PCR efficiency. Restorase modifies the damaged sites and allows for amplification of samples that would otherwise prove useless for PCR-based methods.

Features and Benefits

- Repair damaged DNA
- Restore amplification
- Recover archived DNA

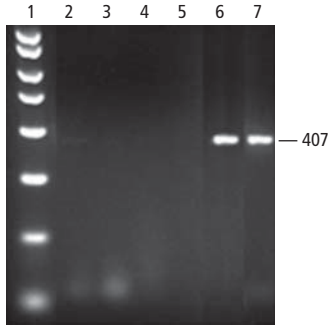
Amplification of Blood Card Extracted DNA



1.3 kb DNA extracted from a Blood Card was amplified using Restorase and other high fidelity enzymes on a 1% agarose gel, 7 ml per lane.

Lane 1: PCR Marker (P9577)
Lane 2: Restorase DNA Polymerase
Lane 3: Standard Taq
Lane 4: Competitor S, enzyme H
Lane 5: Competitor R, enzyme E
Lane 6: Competitor QB, enzyme A, sample 1
Lane 7: Competitor QB, enzyme A, sample 2
Lane 8: Competitor I, enzyme PHF

Rescued 30-Year-Old Archived Moth DNA

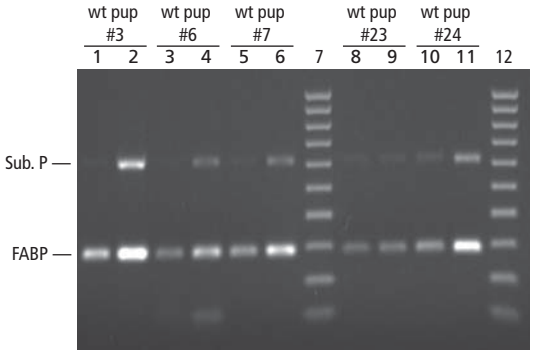


Reliable Amplification of Damaged DNA

Amplification of 407 bp of cytochrome oxidase was restored from 30-year-old moth legs using Restorase and other commercially available thermostable polymerases.

Lane 1: PCR Marker
Lane 2: Competitor N
Lane 3: Competitor S
Lane 4: Taq
Lane 5: AccutaqLA
Lane 6: Restorase
Lane 7: Positive control

Rescue of Mouse Genomic DNA



Amplification of degraded murine genomic DNA templates from wild type (wt) mouse pups after phenol/chloroform extraction. The top band is a 627 bp amplicon (Substance P) and the bottom band is a 289 bp amplicon (FABP-fatty acid binding protein).

Lanes 1, 3, 5, 8 and 10: Amplification with a leading long and accurate DNA polymerase
Lanes 2, 4, 6, 9 and 11: Amplification with Restorase DNA Polymerase
Lanes 7 and 12: 100 bp ladder

Components: Restorase DNA Polymerase
10× Restorase Buffer

Storage: –20 °C
Shipped in wet ice

Cat. No.	Product Description	Quantity
R1028	Restorase DNA Polymerase	20 reactions 50 reactions 200 reactions

SPECIALTY ENZYMES

MTP™ Taq DNA Polymerase

MTP *Taq* DNA Polymerase is a recombinant thermostable enzyme from *Thermus aquaticus* expressed in *E. coli* and purified using a proprietary process to minimize levels of contaminating DNA. The enzyme has 5′→3′ DNA polymerase and exonuclease activities, is approximately 95 kD by SDS-PAGE, and has no detectable endonuclease or 3′→5′ exonuclease activities.

Contaminating DNA present in most other polymerase preparations often preclude or obscure the accurate interpretation of results, especially when targeting conserved sequences (e.g. bacterial 16S rRNA region).[1] Although MTP *Taq* ensures a high-quality, low contaminant DNA polymerase for reliable PCR amplification, DNA contaminants can be introduced into PCR through a number of other reagents.[2] To further minimize the risk of contaminant DNA during PCR, we include 10× MTP *Taq* Buffer (Catalog Number M9943) with each tube of MTP *Taq* DNA Polymerase. Each lot of MTP *Taq* and 10× MTP *Taq* Buffer undergoes strict quality control testing to ensure the absence of contaminating DNA. To prevent false-positive PCR results, only DNA-free reagents should be used in PCR reactions with MTP *Taq* DNA Polymerase.

Features and Benefits

- Proprietary purification process to ensure lowest levels of contaminating DNA
- Specialized 10X Buffer included to minimize addition of contaminating DNA
- Strict quality control testing procedures used to ensure absence of detectable levels of contaminating DNA

Components: MTP Taq DNA Polymerase
10× MTP Taq Buffer

Unit definition: One unit incorporates 10 nmol of total deoxyribonucleoside triphosphates into acid precipitable DNA in 30 minutes at 74 °C

Storage: –20 °C
Shipped in wet ice

Cat. No.	Product Description	Quantity
D7442	MTP Taq DNA Polymerase	50 units 250 units 1,500 units