

USB® Taq DNA Polymerase



Taq DNA Polymerase is a thermostable enzyme derived from *Thermus aquaticus* which is purified from *E. coli* overexpressing native Taq DNA Polymerase. This enzyme possesses a highly processive 5'→3' polymerase activity and a 5'→3' exonuclease activity⁽¹⁾. USB Taq is functionally tested and has no detectable contaminating endonucleases or exonucleases. Taq DNA Polymerase withstands repeated incubations at 95°C without a significant decrease in enzyme activity, and is suitable for routine PCR. USB Taq DNA Polymerase is supplied with 10X PCR Buffer plus a separate tube of 25 mM MgCl₂ for optimizing PCR conditions. Each lot is tested for product yield and length in PCR amplification.

Properties:

Activator: Mg²⁺

Molecular Weight: 95,000 Da

Storage buffer:

20 mM Tris-HCl, pH 8.5, 1 mM DTT, 0.1 mM EDTA, 100 mM KCl, 50% glycerol, stabilizers.

Unit definition:

One unit incorporates 10 nmol of total nucleotides into acid-insoluble material in 30 minutes at 74°C in a total volume of 50 µl.

Concentration:

5 units/µl

Assay conditions:

The reaction mixture (50 µl) contains 25 mM TAPS, pH 9.3 (at 25°C), 50 mM KCl, 2 mM MgCl₂, 1 mM 2-mercaptoethanol, 200µM dNTPs, 250 µg/ml activated salmon sperm DNA and cloned Taq DNA polymerase. After incubation at 74°C for 10 minutes, acid insoluble material is determined.

Tested User Friendly™ functional tests:

Tested in a standard PCR.

Functionally Tested 10X PCR Reaction Buffer (1 ml included, PN 71165):

100 mM Tris-HCl (pH 8.6), 500 mM KCl, 15 mM MgCl₂

Functionally Tested MgCl₂ (1 ml included, PN 71167):

25 mM solution

Purity:

Free from detectable non-specific nucleases.

Shipping and storage:

Shipped on dry ice. Store at -20°C.

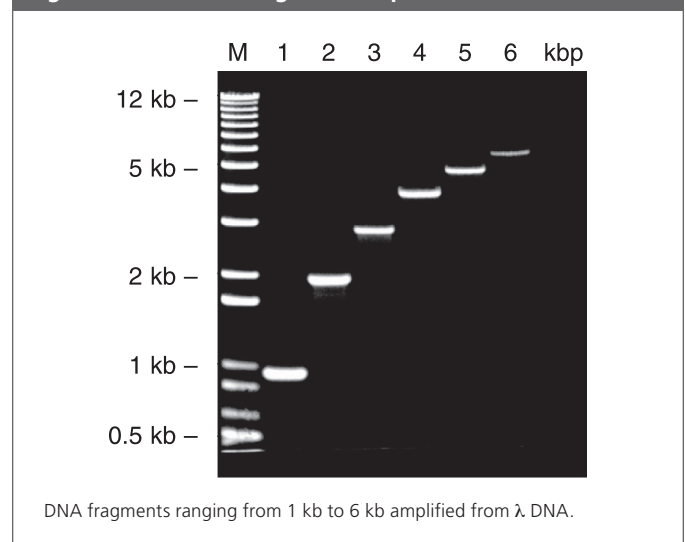
Taq DNA Polymerase

Product code	Pack size
71160	50 units
	250 units
	1,000 units
	5,000 units

References:

1. Innis, M. A., Myambo, K. B., Gelfand, D. H. and Brow, M. A. (1988) *Proc. Natl. Acad. Sci.* **85**, 9436-9440.
2. Lawyer, F. C., Stoffel, S., Saiki, R. K., Myambo, K., Drummond, R. and Gelfand, D. H. (1989) *J. Biol. Chem.* **264**, 6427-6437.
3. Innis, M. A. and Gelfand, D. H. (1990) *PCR Protocols: A Guide to Methods and Applications*, Academic Press.

Fig. 1. 1 kb to 6 kb fragment amplification



Amplify

HotStart-IT® Taq DNA Polymerase [71195]

Includes 10X PCR Buffer and 25 mM MgCl₂
50 units
250 units
1,000 units
5 x 250 units
5,000 units

HotStart-IT Taq Master Mix (2X) [71196]

25 reactions
100 reactions
500 reactions

FideliTaq™ DNA Polymerase [71180]

Includes 10X PCR Buffer and 25 mM MgCl₂
50 units
250 units
1,000 units
5 x 250 units
5,000 units

FideliTaq PCR Master Mix, 2X [71182]

100 reactions

FideliTaq PCR Master Mix Plus [71183]

100 reactions

VeriQuest™ Taq DNA Polymerase [71170]

50 units
250 units
1,000 units
5,000 units

RubyTaq™ DNA Polymerase [71190]

Includes 10X PCR Buffer and 25 mM MgCl₂
50 units
250 units
1,000 units
5,000 units

RubyTaq PCR Master Mix (2X) [71191]

100 reactions (100 µl/rctn)

Taq PCR Kit [71161]

100 reactions (100 µl/rctn)

Taq PCR Master Mix, 2X [71162]

100 reactions (50 µl/rctn)
4 x 625 µl per pack

Taq Master Mix Plus [71163]

Contains mix, 25 mM MgCl₂ and PCR-Qualified H₂O.
100 reactions (50 µl/rctn)

PCR Nucleotide Mix, 10mM [77212]

500 µl
2 x 500 µl

PCR Nucleotide Mix, 25mM [77119]

500 µl

dNTP Set of Four (dA, dC, dG, dT) 100 mM solutions [77100]

4 x 25 µmol (250 µl)
4 dNTPs per pack

Betaine, 5 M Solution [77507]

1.5 ml
5 x 1.5 ml
10 ml

Magnesium Chloride, 1 M Solution [78641]

10 x 1 ml
100 ml

Mineral Oil [71600]

10 ml
25 ml
1 L

Purify

ExoSAP-IT® PCR Product Cleanup

[78250] 20 reactions
[78200] 100 reactions
[78201] 500 reactions
[78202] 2,000 reactions
[78205] 5,000 reactions

HT ExoSAP-IT® High-Throughput PCR Product Cleanup [78395]

480 reactions x 8-tube strip
5,760 reactions x 1 plate
23,040 reactions – 4 plates
1,000 reactions
5,000 reactions

RT-PCR Master Mix (2X) [78370]

100 reactions

FideliTaq RT-PCR Master Mix (2X) [71185]

100 reactions

Analyze

Shrimp Alkaline Phosphatase, Recombinant (rSAP) [78390]

500 units
1,000 units
5,000 units

Calf Intestinal Alkaline Phosphatase (CIAP) [70034]

1,500 units

Exonuclease I

Standard concentration 10 units/µl [70073Z/X]

2,500 units
5,000 units

High concentration 20 units/µl [72073]

5,000 units

AMV Reverse Transcriptase [70041Y/Z]

200 units
1,000 units

M-MLV Reverse Transcriptase [78306]

25,000 units
100,000 units

Agarose - Low Melt, Separation, ≤1,000 bp [32829] Genetic Performance Certified™

25 gm
100 gm

Agarose - Low Melt, Separation, ≥1,000 bp [32830] Genetic Performance Certified

25 gm
100 gm

Agarose - Hi-Res™, Separation ≤1,000 bp [10132]

25 gm
100 gm
500 gm

Agarose - Separation ≥500 bp [75817]

Genetic Performance Certified

25 gm
100 gm
250 gm
500 gm

Agarose - LE [32802]

25 gm
100 gm
250 gm
500 gm
1 kg

RapidRun™ Agarose Buffer, 20X Solution [77523]

1 L
5 L

3 M Sodium Acetate Solution, pH 5.5 [75897]

100 ml
500 ml

TBE Buffer, 5X Solution [75891]

1 L
5 L

TE Buffer, 1X Solution [75893]

10 x 1 ml
100 ml
500 ml

TE Buffer, 50X Solution [75834]

100 ml
500 ml

Water, Nuclease-Free [71786]

10 x 1 ml
100 ml
500 ml
1 L
5 L

For research use only. Not for use in diagnostic procedures.

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