PUREBIOTECH LLC
752A Lincoln Blvd.
Middlesex, NJ 08846

Toll Free: 866-252-7771
Phone: 732-469-7771 Fax: 732-469-7782
Web: www.purebiotechllc.com

Taq-*FORCE*™ Hot DNA Polymerase

Product No.:	HTAQ0250		HTAQ0500
System Includes:		*System Includes:*	
1 x 250 U	Taq-*FORCE*™ Hot DNA Polymerase (5 U/µl)	2 x 250 U	Taq-*FORCE*™ Hot DNA Polymerase (5 U/µl)
1 x 1.2 ml	10X NH_4 Reaction Buffer (pH 8.3)	2 x 1.2 ml	10X NH_4 Reaction Buffer (pH 8.3)
1 x 1.2 ml	$MgCl_2$	2 x 1.2 ml	$MgCl_2$

Taq-*FORCE*™ Hot is a heat-activated form of native Taq. The enzyme provides extremely high specificity and eliminates non-specific reaction products, to give higher yields than standard Taq DNA polymerase. The enzyme must be heat-activated to acquire catalytic activity, usually at 95ºC for 7-10 minutes to give an optimal enzyme:template ratio for most reactions. Although usually unnecessary, the specificity can be maximized for a particular template by empirically determining the optimal pre-incubation time at 95ºC.

Unit Definition: One unit is the amount of enzyme that will incorporate 10 nmoles of dNTPs into an acid-insoluble form in 30 minutes at 72°C under the following assay conditions: 25 mM TAPS, pH 9.3 (25°C); 50 mM KCl; 2 mM $MgCl_2$; 0.2 mM each dATP, dGTP, dTTP and 0.1 mM radiolabeled dCTP; 0.25 mg/ml activated salmon sperm DNA; 1 mM â-mercaptoethanol.

Storage Buffer: Enzyme is supplied in 20 mM Tris-HCl (pH 7.5), 100 mM NaCl, 0.1 mM EDTA, 2 mM DTT, 50% glycerol, 0.1% Tween-20.

Storage Conditions: -20°C. *DO NOT STORE IN A FROST-FREE FREEZER*.

Quality Control: Endonuclease, nickase, or exonuclease activities were not detectable after 8 hours incubation, respectively, of 1 µg of lambda, pBR322, or *Hin*d III digested lambda DNA at 72ºC in the presence of 5 units of Taq-*FORCE*™ Hot DNA Polymerase.

10X NH_4 Reaction Buffer (pH 8.3): 160 mM $(NH_4)_2SO_4$, 670 mM Tris-HCl (pH 8.3 at 25ºC), 0.1% Tween-20. The pH of this buffer is optimized for use with Taq-*FORCE*™ Hot. Use of other buffers may reduce activity.

Mg++ Stock Solution: 50 mM $MgCl_2$

Reaction Conditions: The optimal conditions (incubation time, temperatures, conc. of enzyme, template DNA, primers, $MgCl_2$) depend on the system and must be determined empirically. *IMPORTANT: Spin vials briefly before use.*

Component	Volume	Final Concentration
10X NH_4 Reaction Buffer (pH 8.3)	5 µl	1X
DNTPs Pre-Mixed *(Cat. #DNTP10)*	4 µl	0.2 mM
$MgCl_2$	variable	1.5 – 2.5 mM (typical)
Primer	variable	0.1 – 1.0 µM (each)
Taq-*FORCE*™ Hot DNA Polymerase	variable	0.01 – 0.05 U/µl
Template DNA	variable	cosmid:0.1-5ng, genomic 0.1-0.5µg
Sterile H_2O	variable	----------
Final Volume	50 µl	----------

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