NEW ENGLAND BioLabs Inc.

240 County Road
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Tel 978-927-5054
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www.neb.com
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New England Biolabs
Certificate of Analysis

Product Name:	*Vent® DNA Polymerase*
Catalog #:	*M0254S/L*
Concentration:	*2,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme that will incorporate 10 nmol of dNTP into acid-insoluble material in 30 minutes at 75°C.*
Lot #:	*0341606*
Assay Date:	*06/2016*
Expiration Date:	*6/2018*
Storage Temp:	*-20°C*
Storage Conditions:	*10 mM Tris-HCl , 100 mM KCl , 1 mM DTT , 0.1 mM EDTA , 0.1 % Triton®X-100 , 50 % Glycerol, (pH 7.4 @ 25° C)*
Specification Version:	*PS-M0254S/L v1.0*
Effective Date:	*17 May 2016*

Assay Name/Specification (minimum release criteria)	**Lot #0341606**
Endonuclease Activity (Nicking, Polymerase, dNTP) - A 50 µl reaction in ThermoPol® Reaction Buffer in the presence of 400 µM dNTPs containing 1 µg of supercoiled pUC19 DNA and a minimum of 20 units of Vent® DNA Polymerase incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
PCR Amplification (2.0 kb Lambda DNA) - A 25 µl reaction in ThermoPol® Reaction Buffer in the presence of 200 µM dNTPs and 0.5 µM primers containing 5 ng Lambda DNA with 0.25 units of Vent® DNA Polymerase for 25 cycles of PCR amplification results in the expected 2.0 kb product.	**Pass**
Phosphatase Activity (pNPP) - A 200 µl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM $MgCl_2$ containing 2.5 mM *p*-Nitrophenyl Phosphate (pNPP) and a minimum of 100 units Vent® DNA Polymerase incubated for 4 hours at 37°C yields <0.0001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.	**Pass**
Protein Purity Assay (SDS-PAGE) - Vent® DNA Polymerase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**
qPCR DNA Contamination (*E. coli* Genomic) - A minimum of 2 units of Vent® DNA Polymerase is screened for the presence of *E. coli* genomic DNA using SYBR® Green qPCR with primers specific for the *E. coli* 16S rRNA locus. Results are quantified using a standard curve generated from purified *E. coli* genomic DNA. The measured level of *E. coli* genomic DNA contamination is ≤ 1 *E. coli* genome.	**Pass**

nqa ISO 9001 Registered Quality Management
nqa ISO 14001 Registered Environmental Management
nqa ISO 13485 Registered Medical Devices

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Assay Name/Specification (minimum release criteria)	**Lot #0341606**
RNase Activity (Extended Digestion) - A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Vent® DNA Polymerase is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	**Pass**

Authorized by
Melanie Fortier
17 May 2016

Inspected by
Lea Antonopoulos
02 Jun 2016

ISO 9001 Registered Quality Management
ISO 14001 Registered Environmental Management
ISO 13485 Registered Medical Devices