NEW ENGLAND BioLabs® Inc.

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New England Biolabs
Certificate of Analysis

Product Name:	*DNA Gyrase (E. coli)*
Catalog #:	*M0306S/L*
Concentration:	*5,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme that catalyzes the conversion of 0.5 µg DNA Gyrase (E. coli) Substrate to >95% supercoiled plasmid in a total reaction volume of 30 µl in 30 minutes at 37°C.*
Lot #:	*0021609*
Assay Date:	*09/2016*
Expiration Date:	*9/2017*
Storage Temp:	*-80°C*
Storage Conditions:	*10 mM Tris-HCl, 50 mM KCl, 2 mM DTT, 0.1 mM EDTA, 50 % Glycerol, (pH 7.5 @ 25°C)*
Specification Version:	*PS-M0306S/L v1.0*
Effective Date:	*17 Jun 2016*

Assay Name/Specification (minimum release criteria)	**Lot #0021609**
Endonuclease Activity (Nicking) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of supercoiled pUC19 DNA and a minimum of 25 units of DNA Gyrase (*E. coli*) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	**Pass**
Exonuclease Activity (Radioactivity Release) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of a mixture of single and double-stranded [^{3}H] *E. coli* DNA and a minimum of 25 units of DNA Gyrase (*E. coli*) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	**Pass**
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of Lambda-HindIII DNA and a minimum of 25 units of DNA Gyrase (*E. coli*) incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
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 DNA Gyrase (*E. coli*) 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
Derek Robinson
17 Jun 2016

Inspected by
Cathy Shea
21 Sep 2016

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