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New England Biolabs
Certificate of Analysis

Product Name:	*SrfI*
Catalog #:	*R0629S/L*
Concentration:	*20,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to digest 1 µg of pNEB193-SrfI DNA in CutSmart incubated for 1 hour at 37°C in a total reaction volume of 50 µl.*
Lot #:	*0011611*
Assay Date:	*11/2016*
Expiration Date:	*5/2018*
Storage Temp:	*-20°C*
Storage Conditions:	*300 mM NaCl , 10 mM Tris-HCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol , 500 µg/ml BSA, (pH 7.4 @ 25°C)*
Specification Version:	*PS-R0629S/L v1.0*
Effective Date:	*11 Nov 2015*

Assay Name/Specification (minimum release criteria)	**Lot #0011611**
Endonuclease Activity (Nicking) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of supercoiled pBR322 DNA and a minimum of 100 units of SrfI 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 200 units of SrfI incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	**Pass**
Functional Testing (15 minute Digest) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of pNEB193-SrfI DNA and 1 µl of SrfI incubated for 15 minutes at 37°C results in complete digestion as determined by agarose gel electrophoresis.	**Pass**
Ligation and Recutting (Terminal Integrity) - After a 20-fold over-digestion of pNEB193-SrfI DNA with SrfI, ~75% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, >95% can be recut with SrfI.	**Pass**
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of pNEB193-SrfI DNA and a minimum of 20 units of SrfI incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**Pass**
Protein Purity Assay (SDS-PAGE) - SrfI is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	**Pass**

Authorized by
Derek Robinson
11 Nov 2015

Inspected by
Penghua Zhang
01 Dec 2016

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