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New England Biolabs
Certificate of Analysis

Product Name:	*Tth111I*
Catalog #:	*R0185S/L*
Concentration:	*5,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to digest 1 µg of pBC4 DNA in 1 hour at 65°C in a total reaction volume of 50 µl.*
Lot #:	*0341212*
Assay Date:	*12/2012*
Expiration Date:	*12/2014*
Storage Temp:	*-20 °C*
Storage Conditions:	*500 mM NaCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA*
Specification Version:	*PS-R0185S/L v1.0*
Effective Date:	*26 Jul 2013*

Assay Name/Specification (minimum release criteria)	**Lot #0341212**
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 50 units of Tth111I incubated for 4 hours at 65°C releases <0.1% of the total radioactivity.	**Pass**
Ligation and Recutting (Terminal Integrity) - After a 5-fold over-digestion of pBC4 DNA with Tth111I, ~25% 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 Tth111I.	**Pass**
Non-Specific DNase Activity (16 hour) - A 50 µl reaction in CutSmart™ Buffer containing 1 µg of pBC4 DNA and a minimum of 5 units of Tth111I incubated for 16 hours at 65°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis. NOTE: although no nuclease degradation is detected under these conditions, extended incubations and/or high concentrations of this enzyme may result in star activity. See the product FAQ for recommended reaction conditions for this enzyme.	**Pass**
Protein Purity Assay (SDS-PAGE) - Tth111I is >95% pure as determined by SDS PAGE analysis using Coomassie Blue detection.	**Pass**

* *The BSA in this product has been granted an EDQM "Certificate of Suitability" from the European Directorate for the Quality of Medicines (# R1-CEP-2003-204-Rev00) and has been granted a USDA Certificate for Export of Bovine Blood Plasma/Serum for Manufacture into Pharmaceutical Products.*

Authorized by
Derek Robinson
26 Jul 2013

Inspected by
Anthony Francis
26 Jul 2013

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