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New England Biolabs
Certificate of Analysis

Product Name:	*HpyAV*
Catalog #:	*R0621S/L*
Concentration:	*2,000 units/ml*
Unit Definition:	*One unit is defined as the amount of enzyme required to digest 1 µg of Lambda DNA in 1 hour at 37°C in a total reaction volume of 50 µl.*
Lot #:	*0141802*
Assay Date:	*02/2018*
Expiration Date:	*2/2020*
Storage Temp:	*-20°C*
Storage Conditions:	*300 mM NaCl, 10 mM Tris-HCl, 0.5 mM $NiSO_4$, 0.1 mM EDTA, 50 % Glycerol, 200 µg/ml BSA, (pH 7.4 @ 25°C)*
Specification Version:	*PS-R0621S/L v3.0*
Effective Date:	*03 Apr 2017*

Assay Name/Specification (minimum release criteria)	**Lot #0141802**
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 20 units of HpyAV incubated for 4 hours at 37°C releases <0.3% of the total radioactivity.	**Pass**
Ligation and Recutting (Terminal Integrity) - After a 2-fold over-digestion of Lambda DNA with HpyAV, ~50% of the DNA fragments can be ligated with T4 DNA ligase in 16 hours at 16°C. Of these ligated fragments, ~50% can be recut with HpyAV.	**Pass**
Non-Specific DNase Activity (16 Hour) - A 50 µl reaction in CutSmart® Buffer containing 1 µg of Lambda DNA and a minimum of 6 units of HpyAV incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	**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
03 Apr 2017

Inspected by
Jianying Luo
31 Jan 2018

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