

New England Biolabs Certificate of Analysis

Product Name: AfIII
Catalog Number: R0520S
Concentration: 20,000 U/ml
Unit Definition: One unit is defined as the amount of enzyme required to digest 1 µg of PhiX174 RF I DNA in 1 hour at 37°C in a total reaction volume of 50 µl.
Packaging Lot Number: 10110120
Expiration Date: 05/2023
Storage Temperature: -20°C
Storage Conditions: 50 mM KCl, 10 mM Tris-HCl (pH 7.4), 1 mM DTT, 0.1 mM EDTA, 50% Glycerol, 200 µg/ml BSA
Specification Version: PS-R0520S/L v1.0

AfIII Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0520SVIAL	AfIII	10110121	Pass
B7024AVIAL	Gel Loading Dye, Purple (6X)	10105817	Pass
B6004SVIAL	rCutSmart™ Buffer	10108732	Pass

Assay Name/Specification	Lot # 10110120
Non-Specific DNase Activity (16 Hour) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of PhiX174 DNA and a minimum of 200 Units of AfIII incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.	Pass
Ligation and Recutting (Terminal Integrity) After a 5-fold over-digestion of PhiX174 DNA with AfIII, >95% 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 AfIII.	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 100 units of AfIII incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.	Pass
Endonuclease Activity (Nicking) A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled pBR322 DNA and a	Pass

Assay Name/Specification	Lot # 10110120
<p>minimum of 100 Units of AfIII incubated for 4 hours at 37°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.</p> <p>Blue-White Screening (Terminal Integrity) A sample of Litmus28 vector linearized with a 10-fold excess of AfIII, religated and transformed into an E. coli strain expressing the LacZ beta fragment gene results in <1% white colonies.</p>	<p>Pass</p>

This product has been tested and shown to be in compliance with all specifications.

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Penghua Zhang
Production Scientist
02 Jul 2021



Josh Hersey
Packaging Quality Control Inspector
02 Jul 2021