

## New England Biolabs Certificate of Analysis

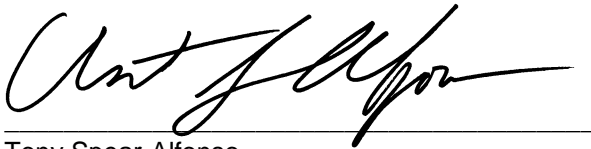
**Product Name:** *Apal*  
**Catalog Number:** *R0114L*  
**Concentration:** *50,000 U/ml*  
**Unit Definition:** *One unit is defined as the amount of enzyme required to digest 1 µg of pXba DNA in 1 hour at 25°C in a total reaction volume of 50 µl.*  
**Lot Number:** *10028236*  
**Expiration Date:** *11/2020*  
**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, 500 µg/ml BSA*  
**Specification Version:** *PS-R0114S/L v1.0*

Apal Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
R0114LVIAL	Apal	10028237	Pass
B7204SVIAL	CutSmart® Buffer	10021120	Pass
B7024SVIAL	Gel Loading Dye, Purple (6X)	10021130	Pass

Assay Name/Specification	Lot # 10028236
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 100 Units of Apal incubated for 4 hours at 25°C results in <20% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<b>Exonuclease Activity (Radioactivity Release)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of a mixture of single and double-stranded [ <sup>3</sup> H] E. coli DNA and a minimum of 100 units of Apal incubated for 4 hours at 25°C releases <0.1% of the total radioactivity.	Pass
<b>Ligation and Recutting (Terminal Integrity)</b> After a 10-fold over-digestion of pXba DNA with Apal, >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 Apal.	Pass
<b>Non-Specific DNase Activity (16 Hour)</b> A 50 µl reaction in CutSmart™ Buffer containing 1 µg of pXba DNA and a minimum of 100 Units of Apal incubated for 16 hours at 25°C results in a DNA pattern free of	Pass

Assay Name/Specification	Lot # 10028236
detectable nuclease degradation as determined by agarose gel electrophoresis.	

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



Tony Spear-Alfonso  
Production Scientist  
24 Oct 2018



Michael Tonello  
Packaging Quality Control Inspector  
21 Nov 2018