

## New England Biolabs Certificate of Analysis

**Product Name:** Antarctic Phosphatase  
**Catalog Number:** M0289L  
**Concentration:** 5,000 U/ml  
**Unit Definition:** One unit is defined as the amount of enzyme that will dephosphorylate 1 µg of pUC19 vector DNA cut with a restriction enzyme generating 5' recessed ends in 30 minutes at 37°C. Dephosphorylation is defined as >95% inhibition of recircularization in a self-ligation reaction and is measured by transformation into *E. coli*.  
**Packaging Lot Number:** 10236898  
**Expiration Date:** 04/2026  
**Storage Temperature:** -20°C  
**Storage Conditions:** 10 mM Tris-HCl, 1 mM MgCl<sub>2</sub>, 0.01 mM ZnCl<sub>2</sub>, 50 % Glycerol, (pH 7.4 @ 25°C)  
**Specification Version:** PS-M0289S/L v2.0

Antarctic Phosphatase Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0289LVIAL	Antarctic Phosphatase	10236899	Pass
B0289SVIAL	Antarctic Phosphatase Reaction Buffer	10208060	Pass

Assay Name/Specification	Lot # 10236898
<p><b>Endonuclease Activity (Nicking)</b>            A 50 µl reaction in CutSmart® Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 50 units of Antarctic Phosphatase incubated for 4 hours at 37°C results in &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</p>	<b>Pass</b>
<p><b>Exonuclease Activity (Radioactivity Release)</b>            A 50 µl reaction in Antarctic Phosphatase Reaction Buffer containing 1 µg of a mixture of single and double-stranded [<sup>3</sup>H] <i>E. coli</i> DNA and a minimum of 50 units of Antarctic Phosphatase incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	<b>Pass</b>
<p><b>Non-Specific DNase Activity (16 Hour)</b>            A 50 µl reaction in NEBuffer 4 containing 1 µg of PhiX174-HaeIII DNA and a minimum of 50 units of Antarctic Phosphatase incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel</p>	<b>Pass</b>

Assay Name/Specification	Lot # 10236898
electrophoresis.	
<p><b>Protein Purity Assay (SDS-PAGE)</b> Antarctic Phosphatase is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</p>	<b>Pass</b>
<p><b>RNase Activity (Extended Digestion)</b> A 10 µl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1 µl of Antarctic Phosphatase is incubated at 37°C. After incubation for 16 hours, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</p>	<b>Pass</b>
<p><b>qPCR DNA Contamination (E. coli Genomic)</b> A minimum of 5 units of Antarctic Phosphatase is screened for the presence of E. coli genomic DNA using SYBR® Green qPCR with primers specific for the E. coli 16S rRNA locus. Results are quantified using a standard curve generated from purified E. coli genomic DNA. The measured level of E. coli genomic DNA contamination is ≤ 1 E. coli genome.</p>	<b>Pass</b>

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

One or more products referenced in this document may be covered by a 3rd-party trademark. Please visit [www.neb.com/trademarks](http://www.neb.com/trademarks) for additional information.

  
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21 May 2024

  
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30 May 2024