

## New England Biolabs Product Specification

<b>Product Name:</b>	<i>Alkaline Phosphatase, Calf Intestinal (CIP)</i>
<b>Catalog #:</b>	<i>M0290S/L</i>
<b>Concentration:</b>	<i>10,000 units/ml</i>
<b>Unit Definition:</b>	<i>One unit is defined as the amount of enzyme that hydrolyzes 1 <math>\mu</math>mol of p-Nitrophenyl Phosphate, PNPP in a total reaction volume of 1 ml in 1 minute at 37°C</i>
<b>Shelf Life:</b>	<i>24 months</i>
<b>Storage Temp:</b>	<i>-20°C</i>
<b>Storage Conditions:</b>	<i>10 mM Tris-HCl, 50 mM KCl, 1 mM MgCl<sub>2</sub>, 0.1 mM ZnCl<sub>2</sub>, 50 % Glycerol, (pH 8.2 @ 25°C)</i>
<b>Specification Version:</b>	<i>PS-M0290S/L v1.0</i>
<b>Effective Date:</b>	<i>09 Jun 2016</i>

### Assay Name/Specification (minimum release criteria)

**Endonuclease Activity (Nicking)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing 1  $\mu$ g of supercoiled PhiX174 DNA and a minimum of 50 units of Alkaline Phosphatase, Calf Intestinal (CIP) incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.

**Exonuclease Activity (Radioactivity Release)** - A 50  $\mu$ l reaction in CutSmart<sup>®</sup> Buffer containing 1  $\mu$ g of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 50 units of Alkaline Phosphatase, Calf Intestinal (CIP) incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.

**Non-Specific DNase Activity (16 Hour)** - A 50  $\mu$ l reaction in NEBuffer 4 containing 1  $\mu$ g of PhiX174-HaeIII DNA and a minimum of 50 units of Alkaline Phosphatase, Calf Intestinal (CIP) incubated for 16 hours at 37°C results in a DNA pattern free of detectable nuclease degradation as determined by agarose gel electrophoresis.

**Protein Purity Assay (SDS-PAGE)** - Alkaline Phosphatase, Calf Intestinal (CIP) is  $\geq$  95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

**RNase Activity (Extended Digestion)** - A 10  $\mu$ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 1  $\mu$ l of Alkaline Phosphatase, Calf Intestinal (CIP) is incubated at 37°C. After incubation for 4 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.



Date 09 Jun 2016

Derek Robinson  
Director of Quality Control

