## Alkaline Phosphatase, Calf Intestinal (CIP)

**M0290S**

<table>
<thead>
<tr>
<th>Lot</th>
<th>Exp</th>
<th>Store at</th>
<th>Temp</th>
<th>1,000 units Lot</th>
<th>10,000 U/ml Exp</th>
<th>Store at</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0621301</td>
<td>1/15</td>
<td>-20°C</td>
<td>10,000 U/ml</td>
<td>0621301</td>
<td>1/15</td>
<td>-20°C</td>
<td>10,000 U/ml</td>
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**Description:** Alkaline Phosphatase catalyzes the removal of 5’ phosphate groups from DNA, RNA and ribo- and deoxyribonucleoside triphosphates. Since CIP-treated fragments lack the 5’ phosphoryl termini required by ligases, they cannot self-ligate (1). This property can be used to decrease the vector background in cloning strategies.

**Source:** Calf intestinal mucosa

**Molecular Weight:** 69 kDa

### Applications:
- Removing 5’ phosphates from DNA, RNA, rNTPs and dNTPs
- Preparation of templates for 5’ end labeling
- Prevention of recirculation of cloning vectors
- Dephosphorylation of serine, threonine and tyrosine residues in proteins

### Properties:
- **Molecular Weight:** 69 kDa
- **Unit Assay Conditions:** 1X NEBuffer 3
  - 100 mM NaCl
  - 50 mM Tris-HCl
  - 10 mM MgCl₂
  - 1 mM dithiothreitol
  - pH 7.9 @ 25°C

### Quality Controls Assays

#### Endonuclease Activity:
- Incubation of 50 units of CIP with 1 µg of φX174 RF I DNA for 4 hours at 37°C in 50 µl reaction buffer resulted in < 5% conversion to RF II.

#### RNase Activity:
- Incubation of 50 units of CIP with 1 µg RNA Transcript for 4 hours at 37°C resulted in the same banding pattern as a sample with no enzyme.

#### Physical Purity:
- Purified to > 95% homogeneity as determined by SDS-PAGE analysis using Coomassie Blue detection.

#### Heat Inactivation:
- No

### References:

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