

## New England Biolabs Product Specification

<i>Product Name:</i>	<i>γDcpS</i>
<i>Catalog #:</i>	<i>M0463S</i>
<i>Concentration:</i>	<i>200,000 units/ml</i>
<i>Unit Definition:</i>	<i>One unit is defined as the amount of γDcpS required to convert 50% of a 500 nM m7G-capped substrate to a 5'-diphosphorylated form in a total reaction volume of 20 μl in 1 hour at 37°C.</i>
<i>Shelf Life:</i>	<i>24 months</i>
<i>Storage Temp:</i>	<i>-20°C</i>
<i>Storage Conditions:</i>	<i>10 mM Tris-HCl, 300 mM NaCl, 1 mM DTT, 0.1 mM EDTA, 50 % Glycerol, (pH 7.4 @ 25°C)</i>
<i>Specification Version:</i>	<i>PS-M0463S v1.0</i>
<i>Effective Date:</i>	<i>01 Apr 2019</i>

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

**Endonuclease Activity (Nicking)** - A 50 μl reaction in γDcpS Reaction Buffer containing 1 μg of supercoiled PhiX174 DNA and a minimum of 200 units of γDcpS 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 μl reaction in γDcpS Reaction Buffer containing 1 μg of a mixture of single and double-stranded [<sup>3</sup>H] *E. coli* DNA and a minimum of 200 units of γDcpS incubated for 4 hours at 37°C releases <0.1% of the total radioactivity.

**Phosphatase Activity (pNPP)** - A 200 μl reaction in 1M Diethanolamine, pH 9.8, 0.5 mM MgCl<sub>2</sub> containing 2.5 mM *p*-Nitrophenyl Phosphate (pNPP) and a minimum of 200 units of γDcpS incubated for 4 hours at 37°C yields <0.00001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.

**Protein Purity Assay (SDS-PAGE)** - γDcpS is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.

**RNase Activity Assay (4 Hour Digestion)** - A 10 μl reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 200 units of γDcpS 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.



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