

## New England Biolabs Certificate of Analysis

**Product Name:** mRNA Decapping Enzyme  
**Catalog Number:** M0608S  
**Concentration:** 100,000 U/ml  
**Unit Definition:** One unit is defined as the amount of mRNA Decapping Enzyme required to convert 50% of a 500 nM m7G-capped substrate to a 5'-monophosphorylated form in a total reaction volume of 20 µl in 1 hour at 37°C.  
**Packaging Lot Number:** 10105441  
**Expiration Date:** 04/2023  
**Storage Temperature:** -20°C  
**Storage Conditions:** 10 mM Tris-HCl , 300 mM NaCl , 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol, (pH 7.4 @ 25°C)  
**Specification Version:** PS-M0608S v2.0

mRNA Decapping Enzyme Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
M0608SVIAL	mRNA Decapping Enzyme	10105442	Pass
B0608SVIAL	10X MDE Decapping Buffer	10105443	Pass

Assay Name/Specification	Lot # 10105441
<b>Endonuclease Activity (Nicking)</b> A 50 µl reaction in 1X mRNA Decapping Enzyme Reaction Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 100 units of mRNA Decapping Enzyme incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	Pass
<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 100 units of mRNA Decapping Enzyme is incubated at 37°C. After incubation for 16 hours, >90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.	Pass
<b>Protein Purity Assay (SDS-PAGE)</b> mRNA Decapping Enzyme is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	Pass
<b>Phosphatase Activity (pNPP)</b>	Pass

Assay Name/Specification	Lot # 10105441
<p>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 100 units of mRNA Decapping Enzyme incubated for 4 hours at 37°C yields &lt;0.00001 unit of alkaline phosphatase activity as determined by spectrophotometric analysis.</p> <p><b>Exonuclease Activity (Radioactivity Release)</b> A 50 µl reaction in 1X mRNA Decapping Enzyme Reaction 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 mRNA Decapping Enzyme incubated for 4 hours at 37°C releases &lt;0.1% of the total radioactivity.</p>	<p><b>Pass</b></p>

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

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