

## New England Biolabs Certificate of Analysis

**Product Name:** *Vaccinia Capping System*  
**Catalog Number:** *M2080S*  
**Concentration:** *10,000 U/ml*  
**Unit Definition:** *One unit of Vaccinia Capping Enzyme is defined as the amount of enzyme required to incorporate 10 pmol of ( $\alpha^{32}P$ ) GTP into an 80 nt transcript in 1 hour at 37°C.*  
**Packaging Lot Number:** *10160297*  
**Expiration Date:** *03/2024*  
**Storage Temperature:** *-20°C*  
**Storage Conditions:** *100 mM NaCl , 20 mM Tris-HCl (pH 8.0), 1 mM DTT , 0.1 mM EDTA , 50 % Glycerol , 0.1 % Triton®X-100*  
**Specification Version:** *PS-M2080S v1.0*

Vaccinia Capping System Component List			
NEB Part Number	Component Description	Lot Number	Individual QC Result
N2080AVIAL	GTP	10156182	Pass
M2080SVIAL	Vaccinia Capping System	10143809	Pass
B9003SVIAL	S-adenosylmethionine (SAM)	10153874	Pass
B2080AVIAL	10X Capping Buffer	10139350	Pass

Assay Name/Specification	Lot # 10160297
<b>Protein Purity Assay (SDS-PAGE)</b> Vaccinia Capping System is $\geq 95\%$ pure as determined by SDS-PAGE analysis using Coomassie Blue detection.	<b>Pass</b>
<b>RNase Activity (Extended Digestion)</b> A 10 $\mu$ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA and a minimum of 10 units of Vaccinia Capping System 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.	<b>Pass</b>
<b>Exonuclease Activity (Radioactivity Release)</b> A 50 $\mu$ l reaction in Capping Buffer containing 1 $\mu$ g of a mixture of single and double-stranded [ $^3H$ ] E. coli DNA and a minimum of 10 units of Vaccinia Capping System incubated for 4 hours at 37°C releases $<0.1\%$ of the total radioactivity.	<b>Pass</b>
<b>Endonuclease Activity (Nicking)</b>	<b>Pass</b>

Assay Name/Specification	Lot # 10160297
A 50 µl reaction in Capping Buffer containing 1 µg of supercoiled PhiX174 DNA and a minimum of 10 units of Vaccinia Capping System incubated for 4 hours at 37°C results in <10% conversion to the nicked form as determined by agarose gel electrophoresis.	

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

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