

## 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.*  
**Lot Number:** *10051986*  
**Expiration Date:** *08/2021*  
**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                        | 10052251   | Pass                 |
| M2080SVIAL      | Vaccinia Capping System    | 10052248   | Pass                 |
| B9003SVIAL      | S-adenosylmethionine (SAM) | 10049759   | Pass                 |
| B2080AVIAL      | 10X Capping Buffer         | 10052250   | Pass                 |

| Assay Name/Specification   | Lot # 10051986 |
|--|----------------|
| <b>Endonuclease Activity (Nicking)</b><br>A 50 $\mu$ l reaction in Capping Buffer containing 1 $\mu$ g 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.   | Pass           |
| <b>Exonuclease Activity (Radioactivity Release)</b><br>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. | Pass           |
| <b>Protein Purity Assay (SDS-PAGE)</b><br>Vaccinia Capping System is $\geq$ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.  | Pass           |
| <b>RNase Activity (Extended Digestion)</b><br>A 10 $\mu$ l reaction in NEBuffer 4 containing 40 ng of a 300 base single-stranded RNA   | Pass           |

| Assay Name/Specification  | Lot # 10051986 |
|---|----------------|
| 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. |                |

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



Bhairavi Jani  
Production Scientist  
11 Sep 2019



Josh Hersey  
Packaging Quality Control Inspector  
12 Sep 2019