Product Name: Vaccinia Capping System  
Catalog #: M2080S  
Concentration: 10,000 units/ml  
Unit Definition: One unit of Vaccinia Capping Enzyme is defined as the amount of enzyme required to incorporate 10 pmol of (α³²P) GTP into an 80 nt transcript in 1 hour at 37°C.

Lot #: 0401607  
Assay Date: 07/2016  
Expiration Date: 7/2018  
Storage Temp: -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  
Effective Date: 16 Dec 2015

<table>
<thead>
<tr>
<th>Assay Name/Specification (minimum release criteria)</th>
<th>Lot #0401607</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Endonuclease Activity (Nicking)</strong> - 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 &lt;10% conversion to the nicked form as determined by agarose gel electrophoresis.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>Exonuclease Activity (Radioactivity Release)</strong> - A 50 µl reaction in Capping Buffer containing 1 µg 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 &lt;0.1% of the total radioactivity.</td>
<td>Pass</td>
</tr>
<tr>
<td><strong>Protein Purity Assay (SDS-PAGE)</strong> - Vaccinia Capping System is ≥ 95% pure as determined by SDS-PAGE analysis using Coomassie Blue detection.</td>
<td>Pass</td>
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<tr>
<td><strong>RNase Activity (Extended Digestion)</strong> - A 10 µl 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, &gt;90% of the substrate RNA remains intact as determined by gel electrophoresis using fluorescent detection.</td>
<td>Pass</td>
</tr>
</tbody>
</table>

Authorized by  
Derek Robinson  
16 Dec 2015

Inspected by  
Bhairavi Jani  
21 Jul 2016