Vaccinia Capping Enzyme (10U/μl)

Catalog # VAM-V5143

Product Details

Vaccinia capping enzyme is composed of two subunits (D1 and D12). The D1 subunit carries three enzymatic activities (RNA triphosphatase, guanylyltransferase and guanine methyltransferase); all necessary for addition of a complete Cap-0 structure, m7Gppp5'N to 5' triphosphate RNA . The Vaccinia capping enzyme provides the necessary components to add 7-methylguanylate cap structures (Cap-0) to the 5′end of RNA . In eukaryotes, these terminal cap structures are involved in stabilization , transport , and translation of mRNAs. Enzymatic production of capped RNA is an easy way to improve the stability and translational competence of RNA used for in vitro translation and transfection.

Application

- Adds 7-methylguanylate cap structures (Cap-0) to the 5′ end of RNA generated by in vitro transcription.
- Cap-0 is required for efficient translation of the RNA in eukaryotic systems.

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.

Quility Control

RNase-free.
DNase-free.
Host Cell DNA : <0.02 ng/μg of protein tested by qPCR.

Formulation

Supplied as 0.2 μm filtered solution in 20 mM Tris, 100 mM NaCl, 1 mM DTT, 0.1 mM EDTA, pH8.0 with glycerol as protectant.

Contact us for customized product form or formulation.

Shipping

This product is supplied and shipped with dry ice, please inquire the shipping cost.

Storage

This product is stable after storage at:

- The product MUST be stored at -20°C or lower upon receipt.
- -20°C for 12 months under sterile conditions.

Notes

RNA used for capping reactions should be purified prior to use and suspended in nuclease-free water. EDTA should not be present and the solution should be free of salts.

Heating the solution of RNA prior to incubation with the Vaccinia Capping Enzyme removes secondary structure on the 5′ end of the transcript.

For labeling the 5′ end, the total GTP concentration should be around 1–3X the molar concentration of mRNA in the reaction.

Bioactivity

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.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.