
Product Data Sheet

Product Name: OVA mRNA with N1-Me-pUTP (5'CAP)

Cat. No.: GM10012

Chemical Properties

Purity		Extinction Coefficient	
Formula		M.Wt	
Salt Form		Concentration	1mg/mL
Buffer	1 mM Sodium Citrate, pH 6.4	Storage	-40°C or below
Synonyms		Backbone	
Base Analog		Sugar Type	
Nucleotide Category			

Background

OVA mRNA with N1-Me-pUTP (5'CAP) is an ovalbumin mRNA produced by in vitro transcription, has a Cap 1 cap structure and a poly(A) tail, and contains N1-Me-pUTP modification. Ovalbumin (OVA) is a member of the chromoprotein superfamily and the main protein component in egg white. OVA is a glycoprotein with a molecular weight of approximately 45,000 daltons, which can induce moderate immunity in the body and is a commonly used antigen in immune and biochemical research. Ovalbumin is often used as an immunogen for immune experiments, such as the establishment of animal models such as altitude sickness and asthma. OVA mRNA can express proteins directly in the cytoplasm without relying on a promoter. The protein expression speed is faster than transfected DNA. The protein expression level is directly related to the transfection amount of mRNA, and there is no risk of gene integration.

OVA mRNA with N1-Me-pUTP is produced through in vitro transcription. By simulating the mRNA processing process in eukaryotes, the product has a Cap 1 cap structure at the 5' end and a poly(A) tail at the 3' end, which can reduce the immune response of the host cell and increase the amount of mRNA. stability and translation efficiency [1]. N1-methyl-pseudouridine (1-methylpseudouridine, m1ψ) is a methyl modification of

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Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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naturally occurring pseudouridine, formed by N1-specific pseudouridine A that exists in archaea and eukaryotes. It is catalyzed by the base transferase NepI [2]. N1-methylpseudouridine is a substitute for uridine (U), which can effectively enhance RNA stability while reducing anti-RNA immune response [3].

References:

- [1]. Jemielity J, Fowler T, Zuberek J, et al. Novel "anti-reverse" cap analogs with superior translational properties. *RNA*. 2003;9(9):1108-1122.
- [2]. Callum J C Parr, et al. N 1-Methylpseudouridine substitution enhances the performance of synthetic mRNA switches in cells. 2020 Apr 6;48(6):e35. doi: 10.1093/nar/gkaa070.
- [3]. Pedro Morais, Hironori Adachi, Yi-Tao Yu. The Critical Contribution of Pseudouridine to mRNA COVID-19 Vaccines. 2021 Nov 4;9:789427. doi: 10.3389/fcell.2021.789427.

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