Product Data Sheet

Product Name: Fluc-eGFP mRNA with N1-Me-pUTP(5’CAP)
Cat. No.: GM10006

Chemical Properties

Purity	>98%	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

Fluc-eGFP fluorescent protein is a fluorescent reporter gene commonly used in molecular biology research. This product connects firefly luciferase mRNA and green fluorescent protein EGFP mRNA through a Linker, and can be used for the detection of two reporter gene experiments. Fluc-eGFP mRNA can express protein directly in the cytoplasm without relying on a promoter. The protein expression speed is faster than transfection of deoxyribonucleotides. The protein expression amount is directly related to the transfection amount of mRNA, and there is no gene Integration Risks. Fluc-eGFP mRNA transfected cells can express strong and bright green fluorescent protein eGFP and firefly luciferase protein. The excitation/emission wavelengths of eGFP are 488 nm/509 nm respectively; firefly luciferase catalyzes luciferin or fatty aldehydes in organisms to produce autofluorescence and chemiluminescence, with wavelengths of approximately 550-570nm[1].

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 increases the stability and translation efficiency of the mRNA[2]. N1-Me-pUTP is a methyl modification of the naturally occurring pseudouridine pUTP, which is catalyzed by the N1-specific

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pseudouridine methyltransferase Nepl that exists in archaea and eukaryotes[3]. This product uses N1-Me-pUTP instead of UTP, which effectively enhances RNA stability and reduces anti-RNA immune responses[4].

References:

[1]. JoÃo M M LeitÃo, Joaquim C G Esteves da Silva. Firefly luciferase inhibition. 2010 Oct 5;101(1):1-8. doi: 10.1016/j.jphotobiol.2010.06.015. Epub 2010 Jul 3.
[2]. Jemielity J, Fowler T, Zuberek J, et al. Novel "anti-reverse" cap analogs with superior translational properties. RNA. 2003;9(9):1108-1122
[3]. 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.
[4]. 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.