Product Data Sheet

Product Name: Cy5 Fluc mRNA(5’CAP)
Cat. No.: GM10014

Chemical Properties

Purity		Extinction Coefficient	
Formula		M.Wt	
Salt Form		Concentration	1mg/mL
Buffer	DEPC-Treated Water	Storage	-40°C or below
Synonyms		Backbone	
Base Analog		Sugar Type	
Nucleotide Category			

Background

Cy5 Fluc mRNA (5'CAP) is a luciferase mRNA transcribed in vitro by simulating mRNA processing in eukaryotes. Cy5 Fluc mRNA (5'CAP) carries the Cy5 label (Cy5-UTP:UTP=3:1 (molar ratio)), Cap 1 cap structure, and poly (A) tail, and can effectively inhibit RNA mediated innate immune activation. Cy5 Fluc mRNA (5'CAP) can be used as a standard to detect the transfection efficiency of different transfection reagents, and can also be used as a control to study the transfection, localization, and expression of fluorescent proteins in mammalian cells.

The luciferase reporter gene (Fluc) can detect gene expression extremely sensitively and efficiently, and is therefore commonly used as a bioluminescence reporter gene for gene regulation and functional research. Cy5 Fluc mRNA (5'CAP) can directly express proteins in the cytoplasm without relying on promoters, with a faster protein expression rate than transfected DNA. The protein expression level is directly related to the mRNA transfection level, and there is no risk of gene integration. Firefly luciferase protein catalyzes the spontaneous fluorescence of intracellular luciferin or fatty aldehydes, producing chemiluminescence at a wavelength of approximately 550-570nm[1]. Cy5 is a commonly used cyanine fluorescent dye, with maximum excitation/emission wavelengths of 650/670nm, respectively.

Caution: Product has not been fully validated for medical applications. For research use only.
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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Firefly luciferase can be used to detect promoter activity or double fluorescent molecule complementarity experiments. Firefly luciferase and sea kidney luciferase can catalyze their respective substrates to emit fluorescence of different colors, and the two light absorption wavelengths are different, so they do not interfere with each other in detection. Therefore, they can be used simultaneously as dual luciferase reporter gene systems in the same chemical reaction system[2].

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]. Yong Zhong Xu, et. Promoter deletion analysis using a dual-luciferase reporter system.2013;977:79-93. doi: 10.1007/978-1-62703-284-1_7.

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