Product Data Sheet

Product Name: 5-Methoxy-UTP
Cat. No.: GB20146

Chemical Properties

Cas. No.			
Formula	$C_{10}H_{17}N_2O_{16}P_3$ (free acid)	M.Wt	514.1 (free acid)
Solubility		Storage	Store at -20°C or below
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	5-Methoxy-UTP		

Background

5-Methoxy-UTP is an analogue of the naturally occurring uridine triphosphate (UTP). Similar to N1-methylpseudouridine and pseudouridine modifications, 5-methoxyuridine is another common chemical modification used for in vitro mRNA synthesis in order to improve mRNA activity and reduce innate immune responses. Chemical modifications of mRNAs with 5-methoxyuridine, N1-methylpseudouridine and pseudouridine have been shown to significantly improve the expression of enhanced green fluorescent protein (eGFP) in a variety of cell lines, among which 5-methoxyuridine-modified eGFP mRNA is more stable than other eGFP mRNAs. In addition, replacing UTP with 5-methoxy-UTP in Cas9 mRNA has also been reported to reduce innate immune responses, making the broad use of Cas9 possible both in vitro and in vivo. References: 1. Li B, Luo X, Dong Y. Effects of Chemically Modified Messenger RNA on Protein Expression. Bioconjugate Chemistry, 2016, 27(3): 849-853. 2. Vaidyanathan S, Azizian KT, Haque AKMA, et al. Uridine Depletion and Chemical Modification Increase Cas9 mRNA Activity and Reduce Immunogenicity without HPLC Purification. Molecular Therapy - Nucleic Acids, 2018, 12: 530-542.

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