Product Data Sheet

Product Name: N1-Me-pUTP,100mM Tris Solution
Cat. No.: GB20002

Chemical Properties

Cas. No.			
Formula	$C_{10}H_{17}N_2O_{15}P_3$(freeacid)	M.Wt	498.10(freeacid)
Solubility		Storage	Please store in -20°C or below, always avoid freeze-thaw cycles.
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			

Background

N1-Me-pUTP,100mM Tris Solution (N1-methyl-pseudouridine-5′-triphosphate) is a modified nucleoside triphosphate, often used as a substitute for UTP in in vitro transcription (IVT). Nucleotide modification can greatly enhance the performance of mRNA by reducing immunogenicity and increasing the stability of RNA molecules[1]. In addition to shutting down immune/eIF2α phosphorylation-dependent translational repression, the incorporated N1-Me-pUTP also significantly altered the dynamics of translation by increasing ribosome pauses and density on mRNA, thereby enhancing mRNA protein expression levels[2]. N1-Me-pUTP, which can greatly enhance the performance of miRNA- and RBP-responsive mRNA switches. The higher sensitivity of N1-Me-pUTP-containing switches for miRNA and RBP (U1A and MS2) allows clear separation of positive and negative miRNA- or RBP-expressing cells[3].

References:
[1] Andries O, Mc Cafferty S, De Smedt SC, Weiss R, Sanders NN, Kitada T. N(1)-methylpseudouridine-incorporated mRNA outperforms pseudouridine-incorporated mRNA by providing enhanced protein expression and reduced immunogenicity in

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

mammalian cell lines and mice. *J Control Release*. 2015;217:337-344.
[2] Svitkin YV, Cheng YM, Chakraborty T, Presnyak V, John M, Sonenberg N. N1-methyl-pseudouridine in mRNA enhances translation through eIF2α-dependent and independent mechanisms by increasing ribosome density. *Nucleic Acids Res*. 2017;45(10):6023-6036.
[3] Parr CJC, Wada S, Kotake K, et al. N 1-Methylpseudouridine substitution enhances the performance of synthetic mRNA switches in cells. *Nucleic Acids Res*. 2020;48(6):e35.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA