

Product Data Sheet

Product Name: 7-Methyl-diguanosine triphosphate ammonium solution (100 mM)

Cat. No.: GC81397

Chemical Properties

Cas. No. 75252-12-9

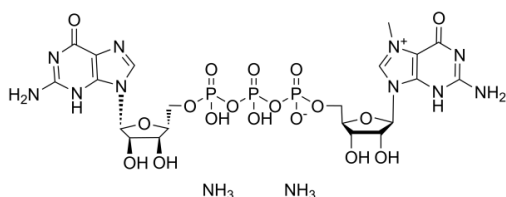
Formula $C_{21}H_{35}N_{12}O_{18}P_3$ M.Wt 836.49

Solubility Storage Store at -20°C , protect from light

General tips For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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

7-Methyl-diguanosine triphosphate (m7Gp3G) ammonium is an mRNA cap structure analog that inhibits in vitro protein synthesis by binding to the translation initiation complex. 7-Methyl-diguanosine triphosphate ammonium binds to eIF4E, promotes cap-dependent translation initiation, stabilizes mRNA, and acts as a translation enhancer. 7-Methyl-diguanosine triphosphate ammonium can be used to prepare synthetic capped RNA transcripts for studies related to mRNA translation, splicing, turnover, and intracellular transport [1] [2].

In Vitro, 7-Methyl-diguanosine triphosphate ammonium inhibits cap-dependent translation in a rabbit

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

Product Data Sheet

reticulocyte lysate system, with an inhibition constant (K_i) of $17 \mu\text{M}$ ^[1]. 7-Methyl-diguanosine triphosphate (5 μg per 10^7 cells; electroporation; single dose) ammonium confers differential in vivo stability to luciferase mRNAs based on their 3'-terminal structures, with 7-Methyl-diguanosine triphosphate ammonium-capped Luc-G16 mRNA having the longest half-life (246 min), and 7-Methyl-diguanosine triphosphate ammonium-capped Luc-A60 mRNA undergoing predominant 5'→3' degradation^[1]. 7-Methyl-diguanosine triphosphate ammonium exhibits high affinity for the eukaryotic initiation factor eIF4E and can be used to generate affinity media for capturing and purifying initiation factors^[2]. The affinity of 7-Methyl-diguanosine triphosphate ammonium for the poly-specific ribonuclease (PARN) polypeptide is measured via fluorescence titration ^[2].

References:

- [1]. Grudzien E, et al. Differential inhibition of mRNA degradation pathways by novel cap analogs. J Biol Chem. 2006;281(4):1857-1867.
- [2]. Grudzien-Nogalska E, et al. Synthesis of anti-reverse cap analogs (ARCAs) and their applications in mRNA translation and stability. Methods Enzymol. 2007;431:203-227.

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