Product Data Sheet

Product Name: 5'-Biotin-G-Monophosphate
Cat. No.: GN20145

Chemical Properties

Purity	>95.00%	Extinction Coefficient	13,700 $Lmol^{-1}cm^{-1}$ at 253 nm
Formula	$C_{26}H_{41}N_8O_{10}PS$ (free acid)	M.Wt	688.70 g/mole (free acid)
Salt Form	Li+	Concentration	
Buffer	H_2O	Storage	-20°C or below
Synonyms	5'-Biotin-GMP	Backbone	5'-Biotin-Monophosphate
Base Analog	Guanosine	Sugar Type	RNA
Nucleotide Category	Biotin Labeled		

Background

5-Biotin-G-Monophosphate allows the incorporation of biotin at the 5' end of RNA and is particularly useful for the development of aptamers[1]. RNA aptamers with 5'-end biotinylation can be generated by in vitro 2'-F RNA transcription using 3mM 5-Biotin-G-Monophosphate[1]. 5-Biotin-G-Monophosphate is a modified nucleotide that incorporates biotin and is a versatile and reliable labeling reagent for the detection of nucleic acids, particularly in DNA amplification, sequencing, and hybridization applications[2]. 5-Biotin-G-Monophosphate is also an ideal tool for screening and analyzing enzyme activities that depend on nucleotide substrates[3].

References:
[1] Kahsai A W, Wisler J W, Lee J, et al. Conformationally selective RNA aptamers allosterically modulate the β2-adrenoceptor[J]. Nature chemical biology, 2016, 12(9): 709-716.
[2] Di Vito A, Reitano E, Poggi L, et al. Biotin oligonucleotide labeling reactions: A method to assess their effectiveness and reproducibility[J]. Analytical biochemistry, 2020, 593: 113590.
[3] Esposito C L, Autiero I, Sandomenico A, et al. Targeted systematic evolution of an RNA platform neutralizing DNMT1 function and controlling DNA methylation[J]. Nature Communications, 2023, 14(1): 99.

Caution: Product has not been fully validated for medical applications. For research use only.
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