Product Data Sheet

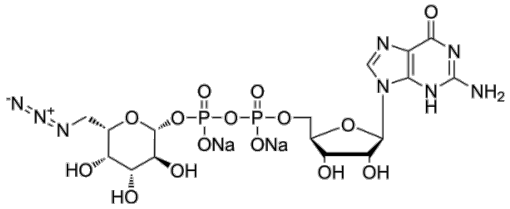
Product Name: GDP-azido-fucose disodium
Cat. No.: GC81685

Chemical Properties

Cas. No.	944560-34-3		
Formula	$C_{16}H_{22}N_8Na_2O_{15}P_2$	M.Wt	674.32
Solubility	H_2O: 50 mg/mL (74.15 mM; Need ultrasonic)	Storage	Store at -20°C

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

GDP-azido-fucose disodium is a glycoengineering tool. GDP-azido-fucose disodium modifies complex glycans by adding an azido-fucose group. GDP-azido-fucose disodium can install azido-fucose tags on antibody Fc glycans for site-specific payload conjugation, thereby forming antibody-

drug conjugates with defined ratios [1] [2].

In Vitro, GDP-azido-fucose disodium serves as a substrate for human α-1,3 fucosyltransferase, introducing an azido-fucose tag into the complex glycan G2 to generate glycan G3[1]. GDP-azido-fucose disodium serves as a precursor for fluorophore-conjugated GDP-fucose via CuI-catalyzed azide-alkyne cycloaddition reaction[2]. GDP-azido-fucose disodium generates fluorophore-conjugated GDP-fucose derivatives that serve as functional donor substrates for FUT2, FUT6, FUT7, FUT8 and FUT9. Each enzyme exhibits distinct fluorophore preferences and enables specific labeling of substrate glycans on fetal bovine fetuin, asialofetuin, Cantuzumab and NIST monoclonal antibodies[2]. GDP-azido-fucose disodium can generate Alexa Fluor® 555-conjugated GDP-fucose, which enables FUT9- and FUT7-mediated glycoprotein labeling in HEK293 cell extracts. This reveals mutually exclusive substrate recognition between FUT9 and ST6Gal1, with minimal interference between FUT9 and ST3Gal2[2]. GDP-azido-fucose disodium can generate Cy5-conjugated GDP-fucose, which, mediated by FUT8, detects Man5 high-mannose-type glycans on RNase B and Man3 glycans on recombinant 1918 H1N1 influenza neuraminidase, provided that these glycans are first modified by MGAT1 to introduce β-2-linked GlcNAc on the α-3 arm[2].

References:
[1]. Shivatare VS, et al. Probing the Internalization and Efficacy of Antibody-Drug Conjugate via Site-Specific Fc-Glycan Labelling of a Homogeneous Antibody Targeting SSEA-4 Bearing Tumors. Israel journal of chemistry. 2023 Oct;63(10-11):e202300042.
[2]. Wu, Z. L., et al. (2020). Detecting substrate glycans of fucosyltransferases on glycoproteins with fluorescent fucose. bioRxiv, 2020-01.