

Product Data Sheet

Product Name: UDP-GlcNAc Disodium Salt

Cat. No.: GC33787

Chemical Properties

Cas. No. 91183-98-1

SMILES O[C@H]1[C@H](N2C(NC(C=C2)=O)=O)O[C@H](COP(=O)(O[C@@H]3[C@@H]([C@H]([C@H](O)[C@@H](CO)O3)O)NC(C)=O)([O-])=O)([O-])=O)[C@H]1O.[Na+].[Na+]

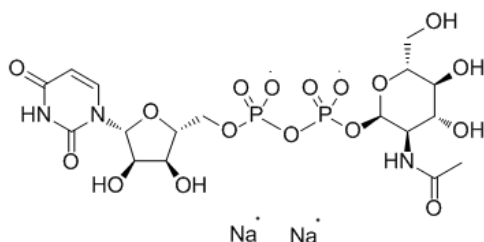
Formula $C_{17}H_{25}N_3Na_2O_{17}P_2$ M.Wt 651.32

Solubility PBS (pH 7.2): 10 mg/ml Storage Store at -20°C, protect from light, unstable in solution, ready to use.

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

UDP-GlcNAc Disodium Salt is produced by the hexosamine biosynthesis pathway (HBP)^[1] and acts as a precursor for several important biomolecules like glycosaminoglycans, which is an essential substrate for protein glycosylation reactions in mammals^[2]. UDP-GlcNAc Disodium Salt is a donor

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

substrate for glycosyltransferases, enzymes that attach sugar moieties to proteins, lipids, and nucleic acids, which is important in cellular signaling, adhesion, and immune responses^[3]. UDP-GlcNAc Disodium Salt is primarily used in research on glycobiology^[4] and the study of metabolic diseases, including diabetes^[5] and cancer^[6].

References:

- [1]. Paneque A, Fortus H, Zheng J, et al. The Hexosamine Biosynthesis Pathway: Regulation and Function. *Genes (Basel)*. 2023 Apr 18;14(4):933. doi: 10.3390/genes14040933. PMID: 37107691; PMCID: PMC10138107.
- [2]. Ruegenberg S, Horn M, Pichlo C, et al. Loss of GFAT-1 feedback regulation activates the hexosamine pathway that modulates protein homeostasis. *Nat Commun*. 2020 Feb 4;11(1):687. doi: 10.1038/s41467-020-14524-5. PMID: 32019926; PMCID: PMC7000685.
- [3]. Yang X, Qian K. Protein O-GlcNAcylation: emerging mechanisms and functions. *Nat Rev Mol Cell Biol*. 2017 Jul;18(7):452-465. doi: 10.1038/nrm.2017.22. Epub 2017 May 10. PMID: 28488703; PMCID: PMC5667541.
- [4]. van Wijk XM, Thijssen VL, Lawrence R, et al. Interfering with UDP-GlcNAc metabolism and heparan sulfate expression using a sugar analogue reduces angiogenesis. *ACS Chem Biol*. 2013 Oct 18;8(10):2331-8. doi: 10.1021/cb4004332. Epub 2013 Sep 3. PMID: 23972127; PMCID: PMC3821560.
- [5]. Slawson C, Copeland RJ, Hart GW. O-GlcNAc signaling: a metabolic link between diabetes and cancer? *Trends Biochem Sci*. 2010 Oct;35(10):547-55. doi: 10.1016/j.tibs.2010.04.005. Epub 2010 May 11. PMID: 20466550; PMCID: PMC2949529.
- [6]. Pan X, Wilson M, Mirbahai L, McConville C, Arvanitis TN, Griffin JL, Kauppinen RA, Peet AC. In vitro metabonomic study detects increases in UDP-GlcNAc and UDP-GalNAc, as early phase markers of cisplatin treatment response in brain tumor cells. *J Proteome Res*. 2011 Aug 5;10(8):3493-500. doi: 10.1021/pr200114v. Epub 2011 Jun 27. PMID: 21644796.

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