

## Product Data Sheet

Product Name: (Z)-PUGNac  
Cat. No.: GC13651

### Chemical Properties

Cas No. 132489-69-1

化学名 [(Z)-[(3R,4R,5S,6R)-3-Acetamido-4,5-dihydroxy-6-(hydroxymethyl)oxan-2-ylidene]amino] N-phenylcarbamate

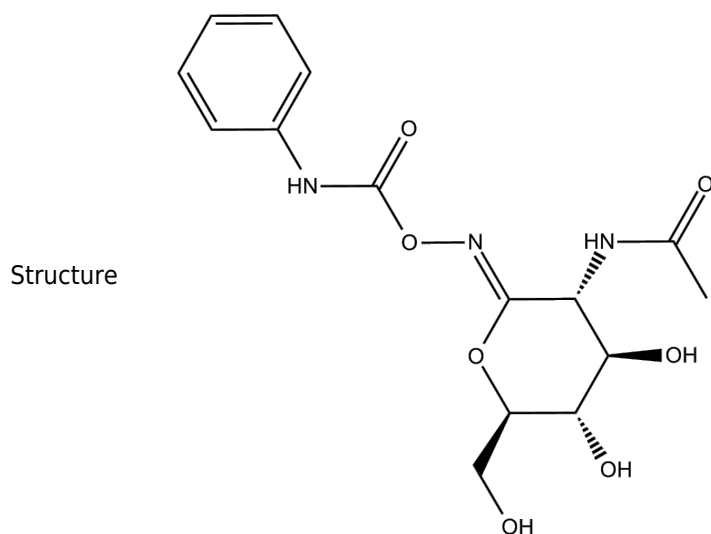
Canonical SMILES O=C(C)N[C@@H]1[C@@H](O)[C@H](O)[C@@H](CO)O/C1=N\OC(NC2=CC=CC=C2)=O

分子式  $C_{15}H_{19}N_3O_7$  分子量 353.33

溶解度 1mg/ml in DMSO, 10mg/mL in DMF 储存条件 Store at -20°C, stored under nitrogen

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.



### Background

Proteins can be modified post-translationally by the addition of O-linked N-acetylglucosamine (O-GlcNAc). Nuclear cytoplasmic O-GlcNAcase and acetyltransferase (NCOAT) is a  $\beta$ -N-acetylglucosaminidase that removes GlcNAc from O-glycosylated proteins. PUGNac is a (phenylcarbamoyl)oxime analog of GlcNAc that reversibly inhibits NCOAT ( $K_i = 40$ -110 nM).[1],[2] It also less potently inhibits other hexosaminidases and exochitinases.[2],[3],[4] (Z)-PUGNac is a stereoisomer of PUGNac that is a more potent inhibitor of NCOAT than the (E) isomer, both in vitro and in cells.[5]

Reference:

[1]. Horsch, M., Hoesch, L., Vasella, A., et al. N-Acetylglucosaminono-1,5-lactone oxime and the corresponding

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

Tel: (626) 353-8530 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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(phenylcarbamoyl)oxime. Novel and potent inhibitors of  $\beta$ -N-acetylglucosaminidase. European Journal of Biochemistry 197(3), 815-818 (1991).

[2]. Dong, D.L.Y., and Hart, G.W. Purification and characterization of an O-GlcNAc selective N-acetyl- $\beta$ -D-glucosaminidase from rat spleen cytosol. The Journal of Biological Chemistry 269(30), 19321-19330 (1994).

[3]. Hodge, A., Gooday, G.W., and Alexander, I.J. Inhibition of chitinolytic activities from tree species and associated fungi. Phytochemistry 41, 77-84 (1996).

[4]. Macauley, M.S., Bubb, A.K., Martinez-Fleites, C., et al. Elevation of global O-GlcNAc levels in 3T3-L1 adipocytes by selective inhibition of O-GlcNAcase does not induce insulin resistance. The Journal of Biological Chemistry 283(50), 34687-34695 (2008).

[5]. Perreira, M., Kim, E.J., Thomas, C.J., et al. Inhibition of O-GlcNAcase by PUGNAc is dependent upon the oxime stereochemistry. Bioorganic & Medicinal Chemistry 14, 837-846 (2006).

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