Product Data Sheet

Product Name: GlcNAcstatin
Cat. No.: GC12847

Chemical Properties

Cas. No.	922163-64-2		
SMILES	CC(C)C(=O)NC1C(C(C(N2C1=NC(=C2)CCC3=CC=CC=C3)CO)O)O		
Formula	$C_{20}H_{27}N_3O_4$	M.Wt	373.45
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	GlcNAcstatin		

Background

GlcNAcstatin is a highly potent and competitive inhibitor of O-GlcNAcase (OGA) with Ki value of 4.4 nM for human OGA [1].

GlcNAcstatin is a synthetic GlcNAc-configured nagstatin derivative with a larger isobutanamido group on N8 and a phenethyl group on C2. It inhibited bacterial OGA with Ki value of 4.6 pM. For human OGA, GlcNAcstatin also showed a potent inhibition with Ki value of 4.4 nM. Besides that, GlcNAcstatin exerted inhibitory activity against human lysosomal Hex A/B with Ki value of 550 nM, suggesting that it is a selective inhibitor of OGA. In HEK293 cells, treatment of GlcNAcstatin at concentration of 20 nM resulted in increased cellular O-GlcNAc levels of many proteins. GlcNAcstatin also significantly prevented O-GlcNAc from binding to proteins in SH-SY5Y human neuroblastoma cell lysates [1, 2].

References:
[1] Dorfmueller H, Borodkin V, Schimpl M, et al. GlcNAcstatins are nanomolar inhibitors of human O-GlcNAcase inducing cellular hyper-O-GlcNAcylation. Biochem. J, 2009, 420: 221-227.

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[2] Dorfmueller H C, Borodkin V S, Schimpl M, et al. GlcNAcstatin: a picomolar, selective O-GlcNAcase inhibitor that modulates intracellular O-glcNAcylation levels. Journal of the American Chemical Society, 2006, 128(51): 16484-16485.

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