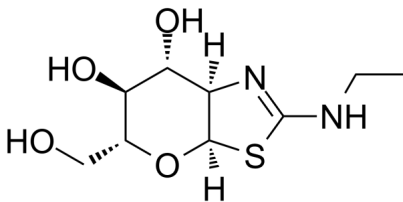


Certificate of Analysis

Catalog Number	BP12319
Product Name	Thiamet G

Physical and Chemical Properties

CAS No.	1009816-48-1
Chemical Formula	C ₉ H ₁₆ N ₂ O ₄ S
Molecular Weight	248.3
Solubility	DMSO: 12.4 mg/mL (50 mM)
Storage	Powder: -20°C for 2 years In solvent: -80°C for 1 year
Chemical Structure OR Tested Image	

Product Information

Description	Thiamet G is a potent, selective O-GlcNAcase inhibitor with K _{iof} 21 nM, while exhibiting 37, 000-fold selectivity over human lysosomal -hexosaminidase.
Targets&IC ₅₀	O-GlcNAcase:21 nM(K _i)

In vitro	In NGF-differentiated PC-12 cells, inhibition of O-GlcNAcase by Thiamet G increases the cellular levels of O-GlcNAc with EC50 of approximately 30 nM. Thiamet G (100 nM) reduces tau phosphorylation by approximately 2.1-fold, 2.7-fold, 1.2-fold and 1.3-fold for Ser396, Thr231, Ser422 and Ser262, respectively. Thiamet G (12.5 nM and 25 nM) significantly enhances p38 phosphorylation by increasing O-GlcNAcylation in mesangial cells. In O-GlcNAc transferase or O-GlcNAcase gain of function cells, thiamet-G restores the assembly of the spindle and partially rescues histone phosphorylation.
In vivo	In rats, thiamet G (50 mg/kg) administered by i.v. crosses the blood brain barrier and then results in increase in brain O-GlcNAc levels in a dose- and time-dependent manner, and reduction of tau phosphorylation in rat brain. Thiamet G is also orally bioavailable. O-GlcNAc accumulation induced by thiamet G stimulates chondrogenic differentiation in C57/bl mice by increasing the gene expression of differentiation markers, as well as the activity of MMP-2 and -9.

Analytical Data

HPLC	Shows Min >99% purity
H-NMR	Consistent with structure
Stability and Solubility Advice	Information on product stability, especially in solution, has rarely been reported and in most cases we can only provide a general guideline. We recommend that once the stock solution has been prepared, it be stored in equal quantities in sealed vials and used within 1 month. Avoid repeated freezing and thawing cycles. Storage conditions for some special products should be referred to their storage details.

Purdue Bioscience Inc.

750 50th St, Brooklyn, NY 11220, USA

<https://www.purduebio.com>

1-877.618.7311

info@purduebio.com

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