SZABO SCANDIC

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# Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


**SZABO-SCANDIC HandelsgmbH**

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

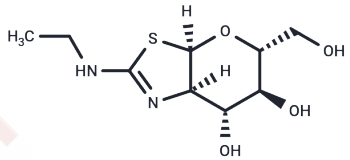
linkedin.com/company/szaboscandic

# Data Sheet (Cat.No.T6056)

TargetMol

## Thiamet G

### Chemical Properties



CAS No. : 1009816-48-1

Formula: C9H16N2O4S

Molecular Weight: 248.3

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

### Biological Description

| | |
|---|---|
| Description | Thiamet G is a potent, selective O-GlcNAcase inhibitor with Kiof 21 nM, while exhibiting 37, 000-fold selectivity over human lysosomal -hexosaminidase. |
| Targets(IC50) | Others,Autophagy |
| 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 mM) 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. [1] Thiamet G (12.5 nM and 25 nM) significantly enhances p38 phosphorylation by increasing O-GlcNAcylation in mesangial cells. [2] In O-GlcNAc transferase or O-GlcNAcase gain of function cells, thiamet-G restores the assembly of the spindle and partially rescues histone phosphorylation. [3] |
| In vivo | In rats, thiamet G (50 mg/kg) administrated 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. [1] 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. [4] |
| Kinase Assay | All enzymatic assays are performed in triplicate at 37°C using 4-methylumbelliferyl N-acetyl-β-d-glucosaminide dehydrate as substrate. 1 nM of purified OGA is incubated with the compounds for 5 min, and then 0.2 mM of the substrate is added. The liberation of 4-methylumbellifery is monitored by kinetic reading at excitation/emission 355/460 nm using a Tecan M200 plate in a mode of 60 s/cycle and 15 cycles in total. |
| Cell Research | Jurkat cells are seeded at 6000 cells/well in a 96-well plate, and 12 h later, cells are treated with compounds for the indicated time. Cell viability is determined by XTT assay. |

### Solubility Information

| | |
|---|---|
| Solubility | H2O: 50 mg/mL (201.37 mM),Sonication is recommended.<br>DMSO: 100 mg/mL (402.74 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 4.0274 mL | 20.1369 mL | 40.2739 mL |
| 5 mM | 0.8055 mL | 4.0274 mL | 8.0548 mL |
| 10 mM | 0.4027 mL | 2.0137 mL | 4.0274 mL |
| 50 mM | 0.0805 mL | 0.4027 mL | 0.8055 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Liu R, Liu Y, Zhang W, et al.PCK1 attenuates tumor stemness via activating the Hippo signaling pathway in hepatocellular carcinoma.Genes & Diseases.2023: 101114.<br/>Yuzwa SA, et al. Nat Chem Biol. 2008, 4(8), 483-