

Product Data Sheet

Product Name: Oxythiamine (Hydroxythiamin)

Cat. No.: GC33316

Chemical Properties

Cas. No. 136-16-3

SMILES CC1=C(CCO)SC=[N+]1CC2=CN=C(C)NC2=O

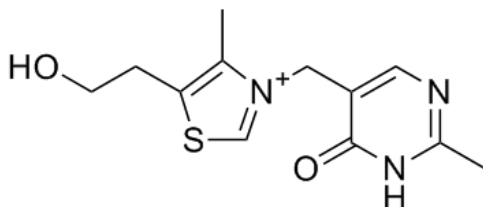
Formula $C_{12}H_{16}N_3O_2S$ M.Wt 266.34

Solubility DMSO : 51.67 mg/mL (194.00 mM) Storage Store at -20°C

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



Protocol

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

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Cell experiment: Human pancreatic carcinoma cell line MIA PaCa-2 is used throughout the study. Experiments are set up in two groups: dose and time-dependent groups. For the dose-dependent group, the cells are stimulated with 5, 50 and 500 μ M Oxythiamine (OT) for 48 hours, respectively. The unstimulated cells are considered as control. For the time-dependent group, the cells are stimulated with 50 μ M Oxythiamine in MEM containing natural amino acids or 50% of 15 N algal amino acid mixture for 12 and 48 h. The unstimulated cells are considered as the zero time point. Each treatment is repeated four times with 10 mL/flask. The cell pellets are then collected for further analysis[2].

References:

- [1]. Moradi H, et al. Functional thiamine deficiency in end-stage renal disease: malnutrition despite ample nutrients. *Kidney Int.* 2016 Aug;90(2):252-254.
- [2]. Wang J, et al. Inhibition of transketolase by oxythiamine altered dynamics of protein signals in pancreatic cancer cells. *Exp Hematol Oncol.* 2013 Jul 27;2:18.

Background

Oxythiamine, an antimetabolite and a vitamin B1 antagonist, is a well-known thiamine antagonist and inhibitor of transketolase.

Oxythiamine, an antimetabolite and a vitamin B1 antagonist, is a well-known thiamine antagonist and inhibitor of transketolase. Oxythiamine alters protein expression in a dose dependent manner. The level of alpha-enolase is increased by Oxythiamine treatment, while expression of 14-3-3 protein beta/alpha is suppressed by Oxythiamine at a stratified dose. Oxythiamine causes dynamic changes of total protein expression in time dependent fashion. Oxythiamine suppresses expression of cellular phosphor proteins significantly[2].

- [1]. Moradi H, et al. Functional thiamine deficiency in end-stage renal disease: malnutrition despite ample nutrients. *Kidney Int.* 2016 Aug;90(2):252-254. [2]. Wang J, et al. Inhibition of transketolase by oxythiamine altered dynamics of protein signals in pancreatic cancer cells. *Exp Hematol Oncol.* 2013 Jul 27;2:18.

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