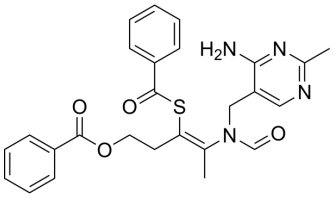
Dibenzoyl Thiamine

Cat. No.:	HY-B2212
CAS No.:	299-88-7
Molecular Formula:	$C_{26}H_{26}N_4O_4S$
Molecular Weight:	490.57
Target:	Others
Pathway:	Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (101.92 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0384 mL	10.1922 mL	20.3845 mL
	5 mM	0.4077 mL	2.0384 mL	4.0769 mL
	10 mM	0.2038 mL	1.0192 mL	2.0384 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.10 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.10 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.10 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dibenzoyl Thiamine (Bentiamine), a derivative of thiamine, is rapidly absorbed into the body and converted to thiamine.

In Vitro

Dibenzoyl Thiamine is a thiol-type thiamine composed of thiamine and benzoic acid. It is not decomposed by aneurinase (thiamine-decomposing enzyme), making it more suitable for food processing than thiamine hydrochloride[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

A chronic toxicity study in male Wistar rats for 6 months at dietary levels of up to 1000 ppm, shows Dibenzoyl Thiamine to be

without specific toxic effects. A teratogenicity study in rats show Dibenzoyl Thiamine to be without embryotoxic or teratogenic effects. Tests for mutagenicity in bacterial systems, in the dominant lethal assay and in an in vivo cytogenetics test show Dibenzoyl Thiamine to be without mutagenic. Dibenzoyl Thiamine is metabolised to Vitamin Br and benzoic acid, and the benzoic acid moiety is almost quantitatively excreted in the urine, as hippuric acid[1].

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PROTOCOL

Animal Administration [1]

Rats: Groups of 65 male and 65 female Sprague-Dawley rats are fed diets containing Dibenzoyl Thiamine at levels of 1000 ppm (Group 1) and 10000 ppm (Group 2). A third group is fed a control diet. The animals are assigned by computer to groups on the basis of body weight, such that mean body weights in all groups are approximately equal. 10 Animals from each group are killed at 52 weeks, the remaining animals at week 105. All signs of ill-health or reaction to treatment are recorded daily. The animals are weighed at weekly intervals[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Heywood R, et al. Tumorigenic and toxic effect of O,S-dibenzoyl thiamine hydrochloride in prolonged dietaryadministration to rats. Toxicol Lett. 1985 Jul;26(1):53-8.

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

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