Product Data Sheet

Product Name: 1,4-PBIT (dihydrobromide)
Cat. No.: GC14627

Chemical Properties

Cas. No.	157254-60-9		
Chemical Name	S,S'-1,4-phenylene-*bis*(1,2-ethanediyl)*bis*-isothiourea, dihydrobromide		
SMILES	N/C(SCCC1=CC=C(CCS/C(N)=N/[H])C=C1)=N/[H].Br.Br		
Formula	$C_{12}H_{18}N_4S_2$ • 2HBr	M.Wt	444.2
Solubility	≤20mg/ml in DMSO;20mg/ml in dimethyl formamide	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	1,4-PBIT (dihydrobromide)		

Background

1,4-PBIT (dihydrobromide) is a potent inhibitor of iNOS and nNOS with Ki values of 7.4 and 16 nM, respectively [1].

Nitric oxide (NO) is an endogenously produced inorganic free radical gas which has been implicated in blood pressure homeostasis, platelet aggregation, neurotransmission, and immunological defense mechanisms. NO is synthesized by three isoforms of nitric oxide synthase (NOS): nNOS, eNOS and iNOS [1].

1,4-PBIT, also known as S,S’-(1,4-Phenylenebis(1,2-ethanediyl))bisisothiourea, is a potent and selective iNOS and nNOS inhibitor. 1,4-PBIT inhibited purified human iNOS, eNOS and nNOS with Ki values of 7.4 nM, 360 nM and 16 nM, respectively. In DLD-1 cells, 1,4-PBIT inhibited human iNOS with IC50 value of 30 μM, presumably to poor membrane permeability [1].

In anesthetized rats, 1,4-PBIT (10 mg/kg, given 1 h after LPS administration), 1,4-PBIT

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effectively reversed the systemic hypotension, reduced the exhaled NO concentration and prevented acute lung injury. 1,4-PBIT also significantly depressed LPS-induced mRNA expressions of iNOS and IL-1β[2].

References:

[1]. Garvey EP, Oplinger JA, Tanoury GJ, et al. Potent and selective inhibition of human nitric oxide synthases. Inhibition by non-amino acid isothioureas. J Biol Chem. 1994 Oct 28;269(43):26669-76.

[2]. Wang D, Wei J, Hsu K, et al. Effects of nitric oxide synthase inhibitors on systemic hypotension, cytokines and inducible nitric oxide synthase expression and lung injury following endotoxin administration in rats. J Biomed Sci. 1999 Jan;6(1):28-35.

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