Product Data Sheet

Product Name: 1,3-PBIT (dihydrobromide)
Cat. No.: GC11173

Chemical Properties

Cas. No.	200716-66-1		
Chemical Name	S,S'-1,3-phenylene-*bis*(1,2-ethanediyl)*bis*-isothiourea, dihydrobromide		
SMILES	N/C(SCCC1=CC(CCS/C(N)=N/[H])=CC=C1)=N/[H].Br.Br		
Formula	$C_{12}H_{18}N_4S_2$ • 2HBr	M.Wt	444.2
Solubility	≤100mg/ml in Water	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	1,3-PBIT (dihydrobromide)		

Background

1,3-PBIT (dihydrobromide) is a potent and selective iNOS inhibitor with Ki value of 47 nM [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].

1,3-PBIT, also known as S,S’-(1,3-Phenylenebis(1,2-ethanediyl))bisisothiourea, is a potent and selective iNOS inhibitor. 1,3-PBIT inhibited purified human iNOS, eNOS and nNOS with Ki values of 47 nM, 9 μM and 0.25 μM, respectively. 1,3-PBIT exhibited 190-fold selective against iNOS versus eNOS. In DLD-1 cells, 1,3-PBIT inhibited human iNOS with IC50 value of 150 μM, presumably to poor membrane permeability [1].

In conscious male Sprague-Dawley rats, 1,3-PBIT (10mg/kg, ip; 1 h after endotoxin)

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inhibited endotoxin-induced decrease in MAP, renal CYP 4A1/A3 protein level and CYP 4A activity and increase in systemic and renal nitrite production [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]. Tunctan B, Yaghini FA, Estes A, et al. Inhibition by nitric oxide of cytochrome P450 4A activity contributes to endotoxin-induced hypotension in rats. Nitric Oxide. 2006 Feb;14(1):51-7.