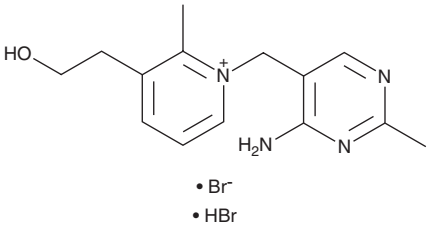
PRODUCT INFORMATION

Pyrithiamine (hydrobromide)

Item No. 19526

CAS Registry No.:	534-64-5
Formal Name:	1-[(4-amino-2-methyl-5-pyrimidinyl) methyl]-3-(2-hydroxyethyl)-2-methyl-pyridinium, bromide, monohydrobromide
MF:	$C_{14}H_{19}N_4O \bullet HBr \bullet Br$
FW:	420.1
Purity:	≥95%
UV/Vis.:	λ_{max}: 239, 273 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pyrithiamine (hydrobromide) is supplied as a solid. Aqueous solutions of pyrithiamine (hydrobromide) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of pyrithiamine (hydrobromide) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Pyrithiamine is the pyridine analog of thiamine that prevents growth of organisms that require intact thiamine.[1] It inhibits the growth of bacterial and fungal species at a pyrithiamine:thiamine ratio of 10:1 in growth media and induces symptoms of thiamine deficiency in mice at a dietary ratio of 3:1. These effects are reversible with addition of sufficient thiamine in all species. Pyrithiamine inhibits the formation of cocarboxylase from thiamine in chicken blood in a dose-dependent manner.[2] It has been used to induce thiamine deficiency in various disease models, including rat models of alcoholism and diencephalic amnesia, to study the effects of thiamine deficiency on disease pathology.[3,4]

References

1. Woolley, D.W. and White, A.G.C. Selective reversible inhibition of microbial growth with pyrithiamine. *J. Exp. Med.* **78(6)**, 489-497 (1943).
2. Woolley, D.W. An enzymatic study of the mode of action of pyrithiamine (neopyrithiamine). *J. Biol. Chem.* **191(1)**, 43-54 (1951).
3. Vetreno, R.P., Anzalone, S.J., and Savage, L.M. Impaired, spared, and enhanced ACh efflux across the hippocampus and striatum in diencephalic amnesia is dependent on task demands. *Neurobiol. Learn Mem.* **90(1)**, 237-244 (2008).
4. Zahr, N.M., Sullivan, E.V., Rohlfing, T., *et al.* Concomitants of alcoholism: Differential effects of thiamine deficiency, liver damage, and food deprivation on the rat brain in vivo. *Psychopharmacology (Berl).* **233(14)**, 2675-2686 (2016).

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