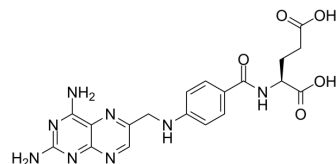


Aminopterin

Cat. No.:	HY-14518		
CAS No.:	54-62-6		
Molecular Formula:	C ₁₉ H ₂₀ N ₈ O ₅		
Molecular Weight:	440.41		
Target:	Antifolate		
Pathway:	Cell Cycle/DNA Damage		
Storage:	Powder	-20°C	3 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 14.71 mg/mL (33.40 mM; Need ultrasonic)
 H₂O : 5 mg/mL (11.35 mM; ultrasonic and adjust pH to 8 with NaOH)

Solvent	Mass	Concentration		
		1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM	2.2706 mL	11.3531 mL	22.7061 mL
	5 mM	0.4541 mL	2.2706 mL	4.5412 mL
	10 mM	0.2271 mL	1.1353 mL	2.2706 mL

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

BIOLOGICAL ACTIVITY

Description

Aminopterin (4-Aminofolic acid), the 4-amino derivative of folic acid, is a folic acid antagonist. Aminopterin catalyses the reduction of folic acid to tetrahydrofolic acid, and competitively inhibits dihydrofolate reductase (DHFR) with a K_i of 3.7 pM. Aminopterin has anticancer and immunosuppressive activity. Aminopterin is used in treatment of pediatric leukemia^{[1][2]}.

In Vitro

The IC₅₀ value of Aminopterin (4-Aminofolic acid) against CCRF-CEM cells during 72 h of exposure is 4.4 nM^[2]. Aminopterin (4-Aminofolic acid) produces a marked inhibition of mitosis in low concentrations in human leukemic leukocytes^[4].
 MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

- [1]. MEYER LM, et al. Aminopterin, a folic acid antagonist, in the treatment of leukemia. Am J Clin Pathol. 1949 Feb;19(2):119-26.
- [2]. Gebhardt DO, et al. The influence of aminopterin on limb regeneration in Ambystoma mexicanum. J Embryol Exp Morphol. 1966 Aug;16(1):143-58.

[3]. Rosowsky A, et al. Synthesis and in vitro antifolate activity of rotationally restricted aminopterin and methotrexate analogues. J Med Chem. 2004 Dec 30;47(27):6958-63.

[4]. F. W Gtmrz, et al. THE EFFECT OF 4-AMINO-PTEROYLGLUTAMIC ACID (AMINOPTERIN) ON HUMAN LEUKEMIC LEUKOCYTES IN VITRO. Blood (1950) 5 (2): 161-166.

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

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