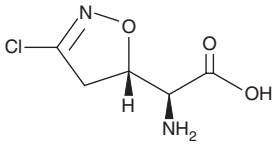
PRODUCT INFORMATION

Acivicin

Item No. 14003

CAS Registry No.:	42228-92-2
Formal Name:	αS-amino-3-chloro-4,5S-dihydro-5-isoxazoleacetic acid
Synonyms:	Antibiotic AT-125, NSC 163501, U 42126
MF:	$C_5H_7ClN_2O_3$
FW:	178.6
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years



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

Laboratory Procedures

Acivicin is supplied as a crystalline solid. Aqueous solutions of acivicin can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of acivicin in PBS (pH 7.2) is approximately 1.4 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Acivicin is a glutamine analog that irreversibly inhibits glutamine-dependent amidotransferases involved in nucleotide and amino acid biosynthesis (K_is = 10 and 560 µM for anthranilate synthase and glutamate synthase, respectively).[1,2] It also reversibly inhibits γ-glutamyl transpeptidase.[3,4] Acividin has been used to elucidate aspects of glutathione metabolism and has known anti-tumorigenic activity.[2,5-7]

References

1. Tso, J.Y., Bower, S.G., and Zalkin, H. Mechanism of inactivation of glutamine amidotransferases by the antitumor drug L-(αS, 5S)-α-amino-3-chloro-4,5-dihydro-5-isoxazoleacetic acid (AT-125). *J. Biol. Chem.* **255(14)**, 6734-6738 (1980).
2. Lyons, S.D., Sant, M.E., and Christopherson, R.I. Cytotoxic mechanisms of glutamine antagonists in mouse L1210 leukemia. *J. Biol. Chem.* **265(19)**, 11377-11381 (1990).
3. Stole, E., Smith, T.K., Manning, J.M., *et al.* Interaction of γ-glutamyl transpeptidase with acivicin. *J. Biol. Chem.* **269(34)**, 21435-21439 (1994).
4. Smith, T.K., Ikeda, Y., Fujii, J., *et al.* Different sites of acivicin binding and inactivation of γ-glutamyl transpeptidases. *Proc. Natl. Acad. Sci. USA* **92(6)**, 2360-2364 (1995).
5. Griffith, O.W. and Meister, A. Excretion of cysteine and γ-glutamylcysteine moieties in human and experimental animal γ-glutamyl transpeptidase deficiency. *Proc. Natl. Acad. Sci. USA* **77(6)**, 3384-3387 (1980).
6. Meck, R.A., Clubb, K.J., Allen, L.M., *et al.* Inhibition of cell cycle progression of human pancreatic carcinoma cells *in vitro* by L-(αS,5S)-α-amino-3-chloro-4,5-dihydro-5-isoxazoleacetic acid, acivicin (NSC 163501). *Cancer Res.* **41(11 Pt 1)**, 4547-4553 (1981).
7. Willoughby, L.F., Schlosser, T., Manning, S.A., *et al.* An *in vivo* large-scale chemical screening platform using *Drosophila* for anti-cancer drug discovery. *Dis. Model. Mech.* **6(2)**, 521-529 (2012).

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