

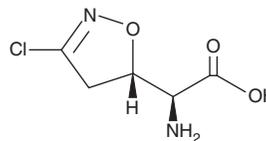
# PRODUCT INFORMATION



## 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<sub>5</sub>H<sub>7</sub>ClN<sub>2</sub>O<sub>3</sub>  
**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 ( $K_i$ s = 10 and 560  $\mu$ M for anthranilate synthase and glutamate synthase, respectively).<sup>1,2</sup> It also reversibly inhibits  $\gamma$ -glutamyl transpeptidase.<sup>3,4</sup> Acivicin has been used to elucidate aspects of glutathione metabolism and has known anti-tumorigenic activity.<sup>2,5-7</sup>

### 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).
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3. Stole, E., Smith, T.K., Manning, J.M., et al. Interaction of  $\gamma$ -glutamyl transpeptidase with acivicin. *J. Biol. Chem.* **269(34)**, 21435-21439 (1994).
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5. Griffith, O.W. and Meister, A. Excretion of cysteine and  $\gamma$ -glutamylcysteine moieties in human and experimental animal  $\gamma$ -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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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