

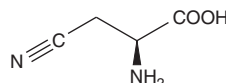
PRODUCT INFORMATION



β-cyano-L-Alanine

Item No. 10010947

CAS Registry No.: 6232-19-5
Formal Name: 3-cyano-L-alanine
Synonym: BCA
MF: $C_4H_6N_2O_2$
FW: 114.1
Purity: ≥98%
Supplied as: A crystalline 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

β-cyano-L-Alanine is supplied as a crystalline solid. Aqueous solutions of β-cyano-L-alanine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of β-cyano-L-alanine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Hydrogen sulfide (H_2S) is a naturally-occurring gasotransmitter with vasodilator and inflammatory modulating activity.^{1,2} H_2S is synthesized naturally in a range of mammalian tissues principally by the activity of two enzymes, cystathionine γ lyase (CSE) and cystathionine β synthetase (CBS). β-cyano-L-Alanine (BCA) is a reversible inhibitor of the H_2S -synthesizing enzyme CSE.³ BCA blocks H_2S synthesis in rat liver preparations with an IC_{50} value of 6.5 μ M and increases blood pressure in anaesthetized rats induced with hemorrhagic shock by inhibiting endogenous H_2S synthesis.⁴ BCA at 50 mg/kg blocked both L-cysteine- and LPS-induced hyperalgesia in rats.⁵

References

1. Li, L. and Moore, P.K. Putative biological roles of hydrogen sulfide in health and disease: A breath of not so fresh air? *Trends Pharmacol. Sci.* **29**(2), 84-90 (2007).
2. Wang, R. Two's company, three's a crowd: Can H_2S be the third endogenous gaseous transmitter? *FASEB J.* **16**(13), 1792-1798 (2002).
3. Pfeffer, M. and Ressler, C. β-cyanoalanine, an inhibitor of rat liver cystathionase. *Biochem. Pharmacol.* **16**(12), 2299-2308 (1967).
4. Mok, Y.Y.P., Atan, M.S.B.M., Ping, C.Y., *et al.* Role of hydrogen sulphide in haemorrhagic shock in the rat: Protective effect of inhibitors of hydrogen sulphide biosynthesis. *Br. J. Pharmacol.* **143**(7), 881-889 (2004).
5. Kawabata, A., Ishiki, T., Nagasawa, K., *et al.* Hydrogen sulfide as a novel nociceptive messenger. *Pain* **132**(1-2), 74-81 (2008).

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.

WARRANTY AND LIMITATION OF REMEDY

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