PRODUCT INFORMATION

β-cyano-L-Alanine
Item No. 10010947

CAS Registry No.: 6232-19-5
Formal Name: 3-cyano-L-alanine
Synonym: BCA
MF: C₄H₆N₂O₂
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 (H₂S) is a naturally-occurring gasotransmitter with vasodilator and inflammatory modulating activity.¹,² H₂S 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 H₂S-synthesizing enzyme CSE.³ BCA blocks H₂S synthesis in rat liver preparations with an IC₅₀ value of 6.5 µM and increases blood pressure in anaesthetized rats induced with hemorrhagic shock by inhibiting endogenous H₂S synthesis.⁴ BCA at 50 mg/kg blocked both L-cysteine- and LPS-induced hyperalgesia in rats.⁵

References

2. Wang, R. Two’s company, three’s a crowd: Can H₂S be the third endogenous gaseous transmitter? FASEB J. 16(13), 1792-1798 (2002).