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_{4}H_{6}N_{2}O_{2}
FW: 114.1
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid

Laboratory Procedures
For long term storage, we suggest that β-cyano-L-alanine (BCA) be stored as supplied at -20°C. It should be stable for at least two years. BCA is supplied as a crystalline solid. BCA is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of BCA be prepared by directly dissolving the BCA compound in aqueous buffers. The solubility of BCA in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Hydrogen sulfide (H_{2}S) is a naturally-occurring gasotransmitter with vasodilator and inflammatory modulating activity.\(^1,2\) H_{2}S 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). BCA is a reversible inhibitor of the H_{2}S-synthesizing enzyme CSE.\(^3\) BCA blocks H_{2}S synthesis in rat liver preparations with an IC_{50} value of 6.5 µM and increases blood pressure in anaesthetized rats induced with hemorrhagic shock by inhibiting endogenous H_{2}S 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 H_{2}S be the third endogenous gaseous transmitter? FASEB J. 16(13), 1792-1798 (2002).

Related Products
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