

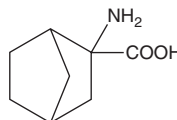
PRODUCT INFORMATION



BCH

Item No. 15249

CAS Registry No.: 20448-79-7
Formal Name: 2-amino-bicyclo[2.2.1]heptane-2-carboxylic acid
Synonym: 2-amino-2-Norbornanecarboxylic Acid
MF: C₈H₁₃NO₂
FW: 155.2
Purity: ≥95%
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

BCH is supplied as a crystalline solid. BCH 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 BCH be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of BCH in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The L-type amino acid transporters (LATs) are Na⁺-dependent neutral amino acid transporters.¹ They include four members in two sub-families, with LAT1 and LAT2 belonging to solute carrier (SLC) family 7 and LAT3 and LAT4 being members of SLC43.¹ LAT1 is overexpressed in many tumors and contributes to ribosome biogenesis and cell growth by supporting mTOR complex 1 (mTORC1) signaling.² BCH is an inhibitor of LAT1 that blocks the uptake of L-leucine with an IC₅₀ value of 131.5 μM.^{3,4} It can inhibit all members of the LAT family at a concentration of 10 mM.¹ In addition to eliminating the uptake of neutral amino acids, BCH suppresses mTORC1 signaling that drives DNA synthesis and cell proliferation.^{1,2} LAT1 is also essential for the uptake of amino acid-related compounds, like L-DOPA (Item No. 13248), through the blood-brain barrier, and this can be inhibited by BCH.^{4,5}

References

1. Wang, Q. and Holst, J. L-type amino acid transport and cancer: targeting the mTORC1 pathway to inhibit neoplasia. *Am. J. Cancer Res.* **5(4)**, 1281-1294 (2015).
2. Dann, S.G., Selvaraj, A., and Thomas, G. mTOR complex1-S6K1 signaling: At the crossroads of obesity, diabetes and cancer. *Trends Mol. Med.* N/A, 1-8 (2007).
3. Fraga, S., Serró, M.P., and Soares-Da-Silva, P. L-type amino acid transporters in two intestinal epithelial cell lines function as exchangers with neutral amino acids. *J. Nutr.* **132(4)**, 733-738 (2002).
4. Kim, D.K., Kanai, Y., Choi, H.W., et al. Characterization of the system L amino acid transporter in T24 human bladder carcinoma cells. *Biochim Biophys. Acta.* **1565(1)**, 112-121 (2002).
5. Kageyama, T., Nakamura, M., Matsuo, A., et al. The 4F2hc/LAT1 complex transports L-DOPA across the blood-brain barrier. *Brain Res.* **879(1-2)**, 115-121 (2000).

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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