

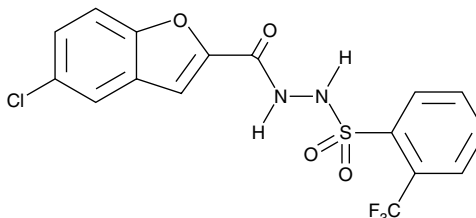
Product Information



BCATc Inhibitor 2

Item No. 9002002

CAS Registry No.: 406191-34-2
Formal Name: 5-chloro-2-benzofurancarboxylic acid
2-[[2-(trifluoromethyl)phenyl]sulfonyl]
hydrazide
Synonym: Cytosolic Branched-Chain Amino Acid
Transferase Inhibitor 2
MF: C₁₆H₁₀ClF₃N₂O₄S
FW: 418.8
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 215, 275 nm



Laboratory Procedures

For long term storage, we suggest that BCATc inhibitor 2 be stored as supplied at -20°C. It should be stable for at least two years.

BCATc inhibitor 2 is supplied as a crystalline solid. A stock solution may be made by dissolving the BCATc inhibitor 2 in the solvent of choice. BCATc inhibitor 2 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of BCATc inhibitor 2 in these solvents is approximately 10, 20, and 25 mg/ml, respectively.

BCATc inhibitor 2 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, BCATc inhibitor 2 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. BCATc inhibitor 2 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Branched-chain amino acid transferases (BCATs) catalyze reversible transamination of leucine, isoleucine, and valine branched-chain amino acids to their respective α-keto acids, liberating L-glutamate.^{1,2} Two forms of BCAT are present in mammals. Mitochondrial BCAT (BCATm) exists in most tissues throughout the body, whereas cytosolic BCAT (BCATc) is confined to the brain, where it regulates glutamate synthesis for release during neuronal excitation. Thus, BCATc inhibition may be useful for the treatment of neurodegenerative and behavioral disorders involving disturbances of the glutamatergic system. BCATc inhibitor 2 is a sulfonyl hydrazide that inhibits BCATc (IC₅₀s = 0.81 and 0.2 μM for human and rat, respectively) with 15-fold selectivity over BCATm.³⁻⁵ This compound has been shown to block calcium influx into neurons (IC₅₀ = 4.8 μM) following inhibition of glutamate uptake and to demonstrate neuroprotective efficacy in an *in vivo* rat model of neurodegeneration.⁴

References

1. Brosnan, J.T. and Brosnan, M.E. *J. Nutr.* **136**(1), 207S-211S (2006).
2. Goto, M., Miyahara, I., Hayashi, H., *et al. Biochem.* **42**, 3725-3733 (2003).
3. Bora, K., Hu, L.-Y., Kesten, S.R., *et al. World Intellectual Property Organization - International Bureau Publication* WO 02/24672 A2 (2002), PCT/US01/25892.
4. Hu, L.-Y., Boxer, P.A., Kesten, S.R., *et al. Bioorg. Med. Chem. Lett.* **16**(9), 2337-2340 (2006).
5. Caballero, J., Vergara-Jaque, A., Fernández, M., *et al. Mol. Divers.* **13**(4), 493-500 (2009).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/9002002

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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