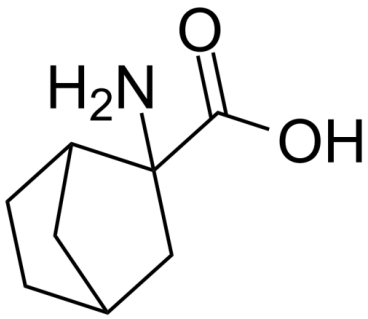
Data Sheet

Product Name:	LAT1-IN-1
Cat. No.:	CS-0029110
CAS No.:	20448-79-7
Molecular Formula:	$C_8H_{13}NO_2$
Molecular Weight:	155.19
Target:	Apoptosis
Pathway:	Apoptosis
Solubility:	DMSO : < 1 mg/mL (insoluble or slightly soluble); H2O : 41.67 mg/mL (268.51 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

LAT1-IN-1 (BCH) is a selective and competitive inhibitor of **large neutral amino acid transporter 1 (LAT1)** significantly inhibit cellular uptake of amino acids and **mTOR** phosphorylation, which induces the suppression of cancer growth and **apoptosis**[1][2][3].
IC50 & Target: LAT1[1] **In Vitro:** LAT1-IN-1 (1-100 mM; 3 days; KYSE30 and KYSE150 esophageal cancer cells) treatment suppresses cell proliferation in a dose-dependent manner[1].
LAT1-IN-1 (30 mM; 24 and 48 hours; KYSE30 and KYSE150 cells) treatment significantly increases cell population in the G0/G1 phase in both KYSE30 and KYSE150 cells, indicating that LAT1-IN-1 induces cell cycle arrest at G1 phase[1].
LAT1-IN-1 (30 mM; 0-24 hours; KYSE30 and KYSE150 cells) treatment decreases phosphorylation of 4E-BP1 and p70S6K at 30 minutes and the decrease is continued for 24 hours. The amount of mTOR, 4E-BP1, and p70S6K proteins is slightly decreased[1]. **In Vivo:** LAT1-IN-1 (200 mg/kg; intravenous injection; daily; for 14 days; male BALB/c nude mice) treatment significantly delays tumor growth and decreases glucose metabolism, indicating that LAT1 inhibition potentially suppresses esophageal cancer growth in vivo[1].

References:

[1]. Ohshima Y, et al. Efficacy of system l amino acid transporter 1 inhibition as a therapeutic target in esophageal squamous cell carcinoma. Cancer Sci. 2016 Oct;107(10):1499-1505.

[2]. Singh N, et al. Discovery of Potent Inhibitors for the Large Neutral Amino Acid Transporter 1 (LAT1) by Structure-Based Methods. Int J Mol Sci. 2018 Dec 21;20(1).

[3]. Wang Q, et al. L-type amino acid transport and cancer: targeting the mTORC1 pathway to inhibit neoplasia. Am J Cancer Res. 2015 Mar 15;5(4):1281-94. eCollection 2015.

CAIndexNames:

Bicyclo[2.2.1]heptane-2-carboxylic acid, 2-amino-

SMILES:

O=C(C1(N)C(C2)CCC2C1)O

Caution: Product has not been fully validated for medical applications. For research use only.

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