Santacruzamate A

Cat. No.: HY-N0931

CAS No.: 1477949-42-0

Molecular Formula: $C_{15}H_{22}N_2O_3$

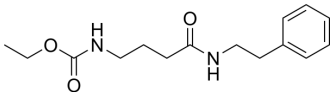
Molecular Weight: 278.35

Target: HDAC; Amyloid-β

Pathway: Cell Cycle/DNA Damage; Epigenetics; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (359.26 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.5926 mL	17.9630 mL	35.9260 mL
5 mM	0.7185 mL	3.5926 mL	7.1852 mL
10 mM	0.3593 mL	1.7963 mL	3.5926 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (8.98 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Santacruzamate A (CAY-10683, STA) is a potent and selective HDAC2 inhibitor with an IC_{50} of 119 pM. STA also exerts neuroprotective property against amyloid-β protein fragment 25–35. STA can be used for cancer and neurological disease research[1][2].

IC_{50} & Target

HDAC2	HDAC6
119 pM (IC_{50})	434 nM (IC_{50})

In Vitro	Santacruzamate A (0.016-50 μM, 28 h) attenuates amyloid-β protein fragment 25–35-induced apoptosis and reverses A β25–35-induced unfolded protein response and endoplasmic reticulum stress in PC12 and SH-SY5Y. 2 μM STA shows the strongest protective effects[2]. Santacruzamate A (0.016-50 μM, 12 h) up-regulates KDEL receptor (KDELR) expression, reinforces ER luminal retention of chaperones, and enhances the binding of PERK to GRP78, inhibiting the amyloid-β protein fragment 25–35-induced mitochondrial fission and apoptosis pathways in PC12[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cell Metab. 2021 Nov 20;S1550-4131(21)00532-5.
- Clin Transl Med. 15 September 2021.
- Metab Eng. 2023 Sep 17:80:94-106.
- Br J Pharmacol. 2024 Jun 5.
- Int J Mol Sci. 2022 Apr 2;23(7):3980.

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REFERENCES

[1]. Pavlik CM,et al. Santacruzamate A, a potent and selective histone deacetylase inhibitor from the Panamanian marine cyanobacterium cf. Symploca sp. J Nat Prod. 2013 Nov 22;76(11):2026-33.

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