(Rac)-ZLc-002

Cat. No.: HY-124996

Molecular Formula: $C_{10}H_{17}NO_5$

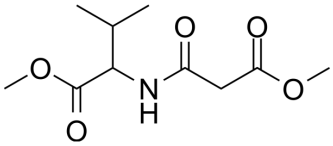
Molecular Weight: 231.25

Target: NO Synthase

Pathway: Immunology/Inflammation

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (432.43 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.3243 mL	21.6216 mL	43.2432 mL
5 mM	0.8649 mL	4.3243 mL	8.6486 mL
10 mM	0.4324 mL	2.1622 mL	4.3243 mL

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

BIOLOGICAL ACTIVITY

Description

(Rac)-ZLc-002, an inhibitor of nNOS interaction with nitric oxide synthase 1 adaptor protein (NOS1AP), suppresses inflammatory nociception and chemotherapy-induced neuropathic pain and synergizes with Paclitaxel (HY-B0015) to reduce tumor cell viability[1][2].

IC_{50} & Target

nNOS/NOS1AP interaction[1]

In Vitro

(Rac)-ZLc-002 (10 μM) reduces co-immunoprecipitation of NOS1AP with nNOS immunoprecipitated from primary cultured cortical neurons. (Rac)-ZLc-002 fails to disrupt nNOS–NOS1AP protein–protein interactions in the AlphaScreen in vitro binding assay. It shows no activity in a cell-free assay[1].

(Rac)-ZLc-002 (10 μM) reduces co-immunoprecipitation of full-length NOS1AP but not of PSD95-PDZ2 from HEK293T cells co-expressing full-length nNOS[1].

(Rac)-ZLc-002 (0-50 μM; 72 h) synergizes with Paclitaxel (HY-B0015) to reduce tumor cell viability[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	4T1 cells

Concentration:	0-50 μM
Incubation Time:	72 h
Result:	Treatment alone had no effect on the viability. Showed synergistic effect with Paclitaxel (HY-B0015).

In Vivo

(Rac)-ZLc-002 (10 mg/kg; i.p.; once or daily for 8 days) attenuates mechanical and cold allodynia evoked by Paclitaxel (HY-B0015), suppresses Paclitaxel-induced neuropathic pain in a mouse model[1].
(Rac)-ZLc-002 (4 and 10 mg/kg; i.p.; once) reduces formalin-evoked nociceptive behavior and Fos-like immunoreactivity in the spinal dorsal horn in rats[1].
(Rac)-ZLc-002 (40 mg/kg/day; i.v.; 7 days) attenuates chronic mild stress (CMS)‐induced anxiogenic behavior in ICR mice[2].
(Rac)-ZLc-002 (10 μM; 1 μl; 30 min after Corticosterone, HY-B1618) delivering into the hippocampus for 7 days reverses the behavioural effects of glucocorticoids in mice[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult C57BL/6J male mice, paclitaxel model of neuropathic pain[1]
Dosage:	10 mg/kg
Administration:	IP, once or daily for 8 days
Result:	Increased postinjection mechanical paw withdrawal thresholds, mechanical paw withdrawal thresholds differed across postinjection times, and the interaction between drug treatment and injection time was significant. Elevated mechanical paw withdrawal thresholds relative to vehicle treatment from 30 min. Decreased postinjection cold responsiveness, cold responsiveness did not differ reliably across postinjection times, and the interaction between drug treatment and injection time was not significant. Once daily dosing increased mechanical paw withdrawal thresholds relative to the vehicle-treated group across the observation interval.

REFERENCES

[1]. Lee WH, Carey LM, Li LL, et al. ZLc002, a putative small-molecule inhibitor of nNOS interaction with NOS1AP, suppresses inflammatory nociception and chemotherapy-induced neuropathic pain and synergizes with paclitaxel to reduce tumor cell viability. Mol Pain. 2018;14:1744806918801224.

[2]. Zhu LJ, Shi HJ, Chang L, et al. nNOS-CAPON blockers produce anxiolytic effects by promoting synaptogenesis in chronic stress-induced animal models of anxiety. Br J Pharmacol. 2020;177(16):3674-3690.

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