Dooku1

Cat. No.: HY-126010

CAS No.: 2253744-54-4

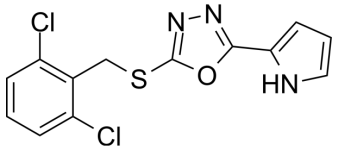
Molecular Formula: $C_{13}H_9Cl_2N_3OS$

Molecular Weight: 326.2

Target: Piezo Channel

Pathway: Membrane Transporter/Ion Channel

Storage: -20°C, sealed storage, away from moisture
* In solvent : -80°C, 2 years; -20°C, 1 year (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (306.56 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	3.0656 mL	15.3280 mL	30.6560 mL
	5 mM	0.6131 mL	3.0656 mL	6.1312 mL
	10 mM	0.3066 mL	1.5328 mL	3.0656 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (6.38 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Dooku1 is a reversibly Yoda1 antagonist with IC_{50} value of 1.3 μM and 1.5 μM for 2 μM Yoda1-induced Ca^{2+} entry HEK 293 cells and HUVECs, respectively. Dooku1 can disrupt Yoda1-induced Piezo1 channel activity and inhibit Yoda1-induced relaxation of aorta. Dooku1 can be used for vascular physiology and disease research[1].

In Vitro

Dooku1 (10 μM, 300 s) has selectivity for Piezo1 channels in HEK 293 and CHO cells.[1].
Dooku1 (10 μM, 140 s) has no effect on constitutive Piezo1 channel activity in Piezo1 T-RE_X cells[1].
Dooku1 (10 μM, 40-60 s) inhibits endogenous Yoda1-activated channels in HUVECs and Piezo1 T-RE_X cells[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[1]

Cell Line:	HUVECs, Piezo1 T-RE_X cells
Concentration:	10 μM

Incubation Time:	40-60 s
Result:	Had a concentration-dependent inhibitory effect against Yoda1-induced Ca^{2+} entry in HUVECs, acting with an IC_{50} of 1.49 μM. Increased potency in HUVECs with an EC_{50} of 0.23 μM, compared with 2.51 μM in Piezo1 T-RE_X cells.

In Vivo

Dooku1 (10 μM incubate 20 min) selectively inhibits Yoda1-induced relaxation of aorta of wild-type male C57BL/6 mice[1].

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

Animal Model:	wild-type male C57BL/6 mice's aortic rings[1]
Dosage:	10 μM
Administration:	20 min
Result:	Suppressed the Yoda1-induced relaxation.

CUSTOMER VALIDATION

- Neuron. 2022 Nov 8;S0896-6273(22)00954-0.
- Applied Materials Today. 27, June 2022, 101465.
- Am J Pathol. 2023 Jun 14;S0002-9440(23)00208-0.

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REFERENCES

[1]. Evans EL, et al. Yoda1 analogue (Dooku1) which antagonizes Yoda1-evoked activation of Piezo1 and aortic relaxation. Br J Pharmacol. 2018 May;175(10):1744-1759.

[2]. Evans EL, et al. Yoda1 analogue (Dooku1) which antagonizes Yoda1-evoked activation of Piezo1 and aortic relaxation. Br J Pharmacol. 2018 May;175(10):1744-1759.

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