EIPA

Cat. No.: HY-101840

CAS No.: 1154-25-2

Molecular Formula: $C_{11}H_{18}ClN_7O$

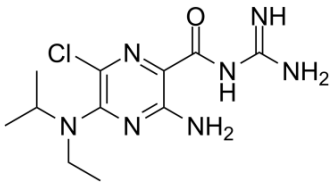
Molecular Weight: 299.76

Target: TRP Channel; Sodium Channel

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

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



SOLVENT & SOLUBILITY

In Vitro

DMSO : 140 mg/mL (467.04 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.3360 mL	16.6800 mL	33.3600 mL
	5 mM	0.6672 mL	3.3360 mL	6.6720 mL
	10 mM	0.3336 mL	1.6680 mL	3.3360 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: ≥ 2.33 mg/mL (7.77 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.33 mg/mL (7.77 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

EIPA (L593754) is a TRPP3 channel inhibitor with an IC_{50} of 10.5 μM. EIPA also inhibits Na^+/H^+-exchanger (NHE) and macropinocytosis[1][2][3].

IC_{50} & Target

IC50: 10.5 μM (TRPP3 channel)[1]
NHE[2]
Macropinocytosis[3]

In Vitro

In the presence of 100 μM EIPA, 10 μM benzamil, and 10 μM phenamil, $^{45}Ca^{2+}$ uptake decreases from 79±9 to 46±4 (58% remaining), 27±4 (34%), 29±5 (37%), and 38±4 (48%) pmol/oocyte/30 min (n=6, P=0.008), respectively. It is found that EIPA, benzamil, and phenamil rapidly and reversibly block Ca^{2+}-activated TRPP3 channel activation at -50 mV, with IC_{50}s of 143±8 (n=36), 10.5±2.2 (n=28), 1.1±0.3 (n=30), and 0.14±0.04 μM (n=25), respectively[1]. The number of autophagic vacuoles

increases dramatically in the HAE and HPE groups after EIPA treatment compare with the HAN and HPN groups. EIPA regulates the initiation and maturation of the autophagy associated with amino acids in IEC-18 cells[2]. In addition, the uptake of cinnamoylphenazine (CA-PZ) and neutral red (NR) is inhibited by EIPA[3].

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

PROTOCOL

Cell Assay [2]

The effect of EIPA alone (without alanine or proline) is also examined in both control (DMEM cultured cells) and amino acid-starved cells. The cells are incubated for 6 h in DMEM containing 5% FBS and either 0 or 0.3 mM EIPA (labelled QNN and QNE, respectively), HBSS containing either 0 or 0.3 mM EIPA (labelled HNN and HNE, respectively), HBSS with 1.0 mM alanine (labelled HAN) or 0.5 mM proline (labelled HPN), HBSS with 1.0 mM alanine and 0.3 mM EIPA (labelled HAE), and HBSS with 0.5 mM proline and 0.3 mM EIPA (labelled HPE)[2].

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

CUSTOMER VALIDATION

- ACS Nano. 2020 Nov 11.
- Sci Adv. 2020 Aug 12;6(33):eaaz1774.
- ACS Appl Mater Interfaces. 2020 Sep 17.
- Anal Chem. 2020 Jan 21;92(2):2103-2111.
- Sci China Mater. 63, 620-628 (2020).

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REFERENCES

[1]. Dai XQ, et al. Inhibition of TRPP3 channel by MK-870 and analogs. Mol Pharmacol. 2007 Dec;72(6):1576-85.

[2]. Shi H, et al. Na+/H+ Exchanger Regulates Amino Acid-Mediated Autophagy in Intestinal Epithelial Cells. Cell Physiol Biochem. 2017;42(6):2418-2429.

[3]. Zhu BY, et al. A new HDAC inhibitor cinnamoylphenazine shows antitumor activity in association with intensive macropinocytosis.

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