Web: www.taiclone.com
Tel: +886-2-2735-9682
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KN-62

Catalog No: tcsc0516

Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg

Specifications

CAS No:
127191-97-3

Formula:
$C_{38}H_{35}N_5O_6S_2$

Pathway:
Neuronal Signaling;Membrane Transporter/Ion Channel

Target:
CaMK;P2X Receptor

Purity / Grade:
>98%

Solubility:
10 mM in DMSO

Observed Molecular Weight:
721.84

Product Description

KN-62 is a selective and potent inhibitor of calmodulin-dependent protein kinase II (**CaMK-II**) with **IC_{50}** of 0.9 μM, KN-62 also displays noncompetitive antagonism at **$P2X_7$** receptors in HEK293 cells, with an **IC_{50}**

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value of approximately 15 nM.

IC50 & Target: IC50: 0.9 μM (CaMK II)[1], 15 nM ($P2X_7$ receptor, in HEK293 cells)[2]

In Vitro: KN-62 is a selective antagonist of Ca^{2+}/calmodulin-dependent protein kinase II (CaMKII). KN-62 potently antagonizes ATP-stimulated Ba^{2+} influx into fura-2 loaded human lymphocytes with an IC_{50} of 12.7±1.5 nM (n=3) and complete inhibition of the flux at a concentration of 500 nM. Similarly, KN-62 inhibits ATP-stimulated ethidium^{+} uptake, measured by time resolved flow cytometry, with an IC_{50} of 13.1±2.6 nM (n=4) and complete inhibition of the flux at 500 nM[1]. KN-62 is found to be a potent antagonist in a functional assay, inhibition of ATP-induced K^{+}efflux in HEK293 cells expressing recombinant human $P2X_7$ receptors. In human leukemic B lymphocytes, KN-62 reduces the rate of permeability increase to larger permeant cations, like ethidium, induced by Bz-ATP with an IC_{50} of 13.1 nM. KN-62 at a concentration of 3 μM has no effect on ATP-induced ethidium influx through the rat $P2X_7$ receptor, while the IC_{50} at the human $P2X_7$ receptor is 0.1 μM. KN-62 has considerable selectivity for $P2X_7$ receptors within the P2 family[2].

In Vivo: The antidepressant-like behavior of $ZnCl_2$ (10 mg/kg, p.o.) (p2 treatment [F(1,28)=0.84, p>0.05] and a significant effect of KN-62×$ZnCl_2$ treatment interaction [F(1,28)=22.57, p2 is completely prevented by treatment of animals with KN-62. No effect in locomotor activity in the open-field test is observed: (KN-62 treatment [F(1,24)=1.97, p>0.05], $ZnCl_2$ treatment [F(1,24)=3.99, p>0.05] and KN-62×$ZnCl_2$ treatment interaction [F(1,24)=0.61, p>0.05])[3].