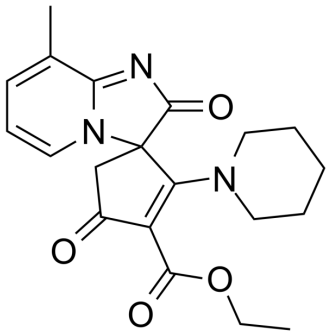
SAK3

Cat. No.:	HY-120597
CAS No.:	1256269-87-0
Molecular Formula:	$C_{20}H_{23}N_3O_4$
Molecular Weight:	369.41
Target:	Calcium Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description

SAK3 is a potent T-type voltage-gated Ca^{2+} channels (T-VGCCs) enhancer. SAK3 enhances Cav3.1 and Cav3.3 T-type Ca^{2+} channel currents. Acute SAK3 administration improves memory deficits in olfactory-bulbectomized mice[1]. SAK3 inhibits amyloid β plaque formation in APP-KI mice by activating the proteasome activity[2].

In Vitro

SAK3 (0.01-10 nM) significantly enhances Cav3.1 or Cav3.3 currents in neuro2A cells ectopically expressing Cav3.1 or Cav3.3, respectively[1].

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

Cell Viability Assay[2]

Cell Line:	Cav3.1 or Cav3.3-overexpressing neuro2A cells
Concentration:	0.1 nM
Incubation Time:	270 s
Result:	Rapidly increased Ca^{2+} currents

In Vivo

Acute SAK3 (0.5 mg/kg) oral administration promotes acetylcholine (ACh) release in hippocampal CA1 via T-VGCC stimulation via enhancing T-type Ca^{2+} channel[1].

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

Animal Model:	Animal Model:Cav3.1 knockout (KO) mice[1]
Dosage:	0.5 mg/kg
Administration:	Administered p.o.
Result:	Significantly increased ACh release in CA1, peaking at 20 min after oral administration.

REFERENCES

[1]. Yasushi Yabuki, et al. Pharmacological properties of SAK3, a novel T-type voltage-gated Ca^{2+} channel enhancer. Neuropharmacology. 2017 May 1;117:1-13.

[2]. Jing Xu, et al.T-Type Ca^{2+} Enhancer SAK3 Activates CaMKII and Proteasome Activities in Lewy Body Dementia Mice Model. Int J Mol Sci. 2021 Jun 8;22(12):6185.

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