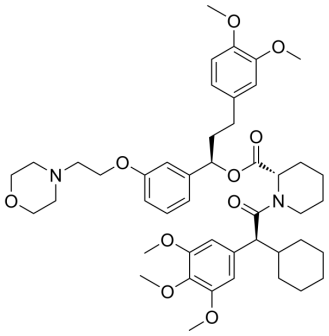
SAFit2

Cat. No.:	HY-102080
CAS No.:	1643125-33-0
Molecular Formula:	$C_{46}H_{62}N_2O_{10}$
Molecular Weight:	802.99
Target:	FKBP
Pathway:	Apoptosis; Autophagy; Immunology/Inflammation
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (124.53 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.2453 mL	6.2267 mL	12.4535 mL
	5 mM	0.2491 mL	1.2453 mL	2.4907 mL
	10 mM	0.1245 mL	0.6227 mL	1.2453 mL

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

In Vivo

1. Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline
   Solubility: ≥ 2.5 mg/mL (3.11 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (2.59 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (2.59 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SAFit2 is a highly potent, highly selective FK506-binding protein 51 (FKBP51) inhibitor with a K_i of 6 nM and also enhances AKT2-AS160 binding[1].

IC_{50} & Target

Ki: 6 nM (FKBP51)[1]

In Vitro

SAFit2 treatment increases the expression of pAKT2 (soleus and EDL muscle) and pAS160 (EDL muscle) in WT cells, but there is no effect of FKBP51 antagonism in 51KO cells.? Moreover, following SAFit2 treatment, GLUT4 expression increases in the membrane fraction of primary EDL myotubes from WT mice, but not from 51KO mice[2].

	MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	It is found that 30 days of SAFit2 administration leads to a reduction in body weight under both control and high-fat diet (HFD) conditions. SAFit2 significantly increases phosphorylated AKT2 and AS160 in EDL muscle and likewise increases expression of GLUT4 at the membrane in soleus muscle[2]. When SAFit2 is applied 1 h before testing, no alterations in anxiety-related behavior are observed. However, SAFit2 treatment induces an anxiolytic phenotype in mice injected 16 h prior testing, which is reflected in a significantly increased open arm time in the elevated plus maze (EPM) ($z=-2.183$, $p<0.05$).? SAFit2 treatment leads to a significantly reduced latency to enter the lit compartment ($z=-2$ to 265, $p<0.05$), as well as a significantly increased distance traveled ($t_{(20)}=-2.371$, $p<0.05$) in the lit compartment[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	Primary EDL myotubes are exposed to 0.6 μM SAFit2 or DMSO (vehicle) overnight. The following day, cells are serum-starved in low glucose (1000 mg/L) DMEM for 4 h with SAFit2 or DMSO, and are subsequently collected for the rapid preparation of the plasma membrane fraction. The membrane fraction is used in subsequent Western blot assays for the detection of GLUT4[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Male C57BL/6N mice at the age of 12 to 15 weeks are used. The mice are held under standard conditions (12 h light/dark cycle, lights on at 08:00 A.M.; temperature 23±2°C), are single housed and acclimatized to the room for 2 weeks before the commencing experiments. Food and tap water are available ad libitum. Animals receive a bilateral microinjection into the basolateral amygdala (BLA) (0.5 μL per side) of vehicle or SAFit2 (20 mg/kg BW) 16 h before the start of the test. The effects on anxiety-related behavior is analyzed (n=14 per group) 16 h after the application[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- J Steroid Biochem Mol Biol. 2023 Apr 14;106312.
- Scand J Immunol. 2022 Jul 8;e13203.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Gaali S, et al. Rapid, Structure-Based Exploration of Pipecolic Acid Amides as Novel Selective Antagonists of the FK506-Binding Protein 51. J Med Chem. 2016 Mar 24;59(6):2410-22.

[2]. Balsevich G, et al. Stress-responsive FKBP51 regulates AKT2-AS160 signaling and metabolic function. Nat Commun. 2017 Nov 23;8(1):1725.

[3]. Hartmann J, et al. Pharmacological Inhibition of the Psychiatric Risk Factor FKBP51 Has Anxiolytic Properties. J Neurosci. 2015 Jun 17;35(24):9007-16.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA