MK-6892

Cat. No.: HY-10680

CAS No.: 917910-45-3

Molecular Formula: $C_{19}H_{22}N_4O_5$

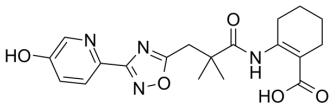
Molecular Weight: 386.4

Target: GPR109A

Pathway: GPCR/G Protein

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (129.40 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.5880 mL	12.9400 mL	25.8799 mL
5 mM	0.5176 mL	2.5880 mL	5.1760 mL
10 mM	0.2588 mL	1.2940 mL	2.5880 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: ≥ 2.5 mg/mL (6.47 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (6.47 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (6.47 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

MK-6892 is a potent, selective, and full agonist for the high affinity nicotinic acid (NA) receptor GPR109A. K_i and GTPγS EC_{50} of MK-6892 on the Human GPR109A is 4 nM and 16 nM, respectively.

IC_{50} & Target

Ki: 4 nM (GPR109A)[1]
EC50: 16 nM (GPR109A)[1]

In Vitro

MK-6892 evokes a potent internalization of GPR109A in U2OS β-arrestin2-RrGFP cells.MK-6892 shows an EC_{50} value of 74 nM

	on calcium mobilization assay[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	MK-6892 is orally administered to WT or nicotinic acid (NA) receptor null mice on the same C57Bl/6 genetic background. After 15 min of 100 mg/kg dosing of MK-6892 to fed WT or NA receptor null mice, the blood levels of MK-6892 at 15 min are 229 μM (~950-fold greater than the in vitro EC_{50} determined in mouse NA receptor GTPγS assay, which is 240 nM) in WT mice and 148 μM (~620-fold greater than the in vitro EC_{50}) in NA receptor null mice. MK-6892 effectively suppresses plasma FFA in the WT but not in the NA receptor null animals, indicating that the FFA reduction of MK-6892 is NA receptor-dependent. MK-6892 is selected for the studies because of its good PK and activity profiles in these two species (EC_{50}=4.6 μM in the GTPγS assay for the rat NA receptor and 1.3 μM in the GTPγS assay for the dog NA receptor). Despite the significant weaker activity of MK-6892 in rat and dog with respect to that in human, MK-6892 shows good activity in reducing FFA in rat and dog models [1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Glia. 2018 Feb;66(2):256-278.
- Research Square Preprint. 2023 Jul 7.
- bioRxiv. 2023 Jul 3.
- bioRxiv. 2023 Mar 29.

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REFERENCES

[1]. Shen HC, et al. Discovery of a biaryl cyclohexene carboxylic acid (MK-6892): a potent and selective high affinity niacin receptor full agonist with reduced flushing profiles in animals as a preclinical candidate. J Med Chem. 2010 Mar 25;53(6):2666-70.

[2]. Kim HY, et al. Discovery of 4-(phenyl)thio-1H-pyrazole derivatives as agonists of GPR109A, a high affinity niacin receptor. Arch Pharm Res. 2015 Jun;38(6):1019-32.

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