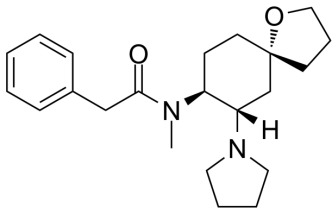
U-69593

Cat. No.:	HY-12363
CAS No.:	96744-75-1
Molecular Formula:	$C_{22}H_{32}N_2O_2$
Molecular Weight:	356.5
Target:	Opioid Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	U-69593 is a potent and selective κ1-opioid receptor agonist[1]. U-69593 attenuates addictive agent-induced behavioral sensitization in the rat[2]. U-69593 reduces anxiety and enhances spontaneous alternation memory in mice[3]. U-69593 reduces calcium-dependent dialysate levels of dopamine and glutamate in the ventral striatum[4].
IC_{50} & Target	κ Opioid Receptor/KOR

In Vivo

U-69593 (0.16 mg/kg; s.c.) attenuates addictive agent-induced behavioral sensitization in the rat[2].
U-69593 (1, 10, 25 nmol/μL; Microinjection) reduces anxiety and enhances spontaneous alternation memory in mice[3].
U-69593 (0.32 mg/kg; s.c.) decreases acute amphetamine-evoked behaviors and calcium-dependent dialysate levels of dopamine and glutamate in the ventral striatum[4].

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

Animal Model:	Rat[2]
Dosage:	0.16 mg/kg
Administration:	S.c. (an acute injection of cocaine (20 mg/kg i.p.))
Result:	Attenuated the acute and chronic effects of cocaine on locomotor activity and stereotypy.

Animal Model:	CD-1 mice[3]
Dosage:	1, 10, 25 nmol/μL
Administration:	Microinjection (in the infralimbic cortex (IL)), once every week, 2 weeks
Result:	Dose-dependently prolonged transfer-latency (T-L) and produced a dose-dependent anxiolytic behavioural profile, and after 24 h, the mouse were observed small but detectable carry-over effects. In week 2, U-69593 dose-dependently prolonged T/L and produced an anxiolytic behavioural profile in the first EPM (elevated plus-maze) trial, but observed a robust anxiolytic behavioural profile.

Animal Model:	280-350 g, male Wistar rats[4]
Dosage:	0.32 mg/kg
Administration:	S.c. (followed 15 min later by an injection of amphetamine (2.5 mg/kg i.p.))
Result:	Significantly reduced the amphetamine-stimulated increase in dialysate dopamine levels and blocked the ability of amphetamine to evoke an increase in dialysate glutamate levels.

REFERENCES

[1]. [2]Heidbreder CA, et al. The kappa-opioid receptor agonist U-69593 attenuates cocaine-induced behavioral sensitization in the rat. Brain Res. 1993 Jul 9;616(1-2):335-8.

[2]. [3]Wall PM, et al. U-69,593 microinjection in the infralimbic cortex reduces anxiety and enhances spontaneous alternation memory in mice. Brain Res. 2000 Feb 21;856(1-2):259-80.

[3]. [4]Gray AM, et al. The kappa-opioid agonist, U-69593, decreases acute amphetamine-evoked behaviors and calcium-dependent dialysate levels of dopamine and glutamate in the ventral striatum. J Neurochem. 1999 Sep;73(3):1066-74.

[4]. Lahti RA, et al. [3H]U-69593 a highly selective ligand for the opioid kappa receptor. Eur J Pharmacol. 1985 Feb 26;109(2):281-4.

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