NS11394

Cat. No.: HY-11048

CAS No.: 951650-22-9

Molecular Formula: $C_{23}H_{19}N_3O$

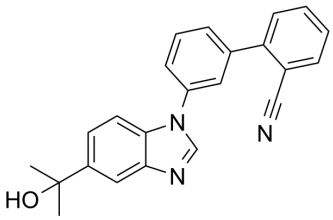
Molecular Weight: 353.42

Target: GABA Receptor

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

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 : 100 mg/mL (282.95 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.8295 mL	14.1475 mL	28.2949 mL
	5 mM	0.5659 mL	2.8295 mL	5.6590 mL
	10 mM	0.2829 mL	1.4147 mL	2.8295 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 (7.07 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (7.07 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (7.07 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NS11394 is an orally active and unique subtype-selective $GABA_A$ positive allosteric receptor (PAM), with a K_i of ~0.5 nM. NS11394 shows a selectivity profile in the order of $GABA_A$-5 > α3 > α2 > α1-containing receptors. NS11394 has anxiolytic and anti-inflammatory properties[1][2][3].

In Vivo

NS11394 (1-120 mg/kg) selectively attenuates injury-induced nociceptive behaviors in the formalin test[2].
NS11394 (1–10 mg/kg) markedly attenuates the deficit in hindpaw weight bearing [F(4,61) = 7.569, p < 0.001] in CFA rats[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult male Sprague-Dawley rats[2].
Dosage:	1-120 mg/kg.
Administration:	Orally.
Result:	Significantly attenuated motor function compared with corresponding vehicle responses. Significantly reduced flinching behavior during interphase [F(3,30) = 4.139, p < 0.05] and the second phase [F(3,30) = 11.033, p < 0.001] of the formalin test compared with vehicle treatment indicative of a selective effect on injury-induced nociceptive transmission.

CUSTOMER VALIDATION

- Cell. 2017 Jan 12;168(1-2):86-100.e15.
- Cell Rep. 2020 Jan 21;30(3):602-610.e6.
- Biochem Pharmacol. 2018 Dec;158:339-358.

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REFERENCES

[1]. N. R. Mirza, et al. NS11394 [3 -[5-(1-Hydroxy-1-methyl-ethyl)-benzoimidazol-1-yl]-biphenyl-2-carbonitrile], a Unique Subtype-Selective GABAA Receptor Positive Allosteric Modulator: In Vitro Actions, Pharmacokinetic Properties and in Vivo Anxiolytic Effica

[2]. G. Munro, J. A., et al. Comparison of the Novel Subtype-Selective GABAA Receptor-Positive Allosteric Modulator NS11394 [3′-[5-(1-Hydroxy-1-methyl-ethyl)-benzoimidazol-1-yl]-biphenyl-2-carbonitrile] with Diazepam, Zolpidem, Bretazenil, and Gaboxadol in Rat

[3]. Martine Hofmann, et al. Assessment of the effects of NS11394 and L-838417, a2/3 subunit-selective GABAA receptor-positive allosteric modulators, in tests for pain, anxiety, memory and motor function. Behavioural Pharmacology 2012, 23:790–801.

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