

Product data sheet



MedKoo Cat#: 577955 Name: NAN190 free base CAS: 102392-05-2 (free base) Chemical Formula: C ₂₃ H ₂₇ N ₃ O ₃ Exact Mass: 393.2052 Molecular Weight: 393.487	
Product supplied as: Powder	
Purity (by HPLC): ≥ 98%	
Shipping conditions: Ambient temperature	
Storage conditions: Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

NAN-190 is a mixed antagonist and partial agonist of the serotonin (5-HT) receptor subtype 5-HT1A. NAN-190 potentiates the circadian response to light and speeds re-entrainment to advanced light cycles. NAN-190 potentiates the impairment of retention produced by swim stress. NAN-190 is a possible antagonist for methamphetamine.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.54 mL	12.71 mL	25.41 mL
5 mM	0.51 mL	2.54 mL	5.08 mL
10 mM	0.25 mL	1.27 mL	2.54 mL
50 mM	0.05 mL	0.25 mL	0.51 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Li S, Jin Y, Li M, Yu H. NAN-190, a 5-HT1A antagonist, alleviates inflammatory pain by targeting Nav1.7 sodium channels. *Life Sci.* 2023 Apr 15;319:121520. doi: 10.1016/j.lfs.2023.121520. Epub 2023 Feb 22. PMID: 36828129.

2. Terada K, Murata A, Toki E, Goto S, Yamakawa H, Setoguchi S, Watase D, Koga M, Takata J, Matsunaga K, Karube Y. Atypical Antipsychotic Drug Ziprasidone Protects against Rotenone-Induced Neurotoxicity: An In Vitro Study. *Molecules.* 2020 Sep 14;25(18):4206. doi: 10.3390/molecules25184206. PMID: 32937854; PMCID: PMC7570562.

In vivo study

1. Goitia B, Rivero-Echeto MC, Weisstaub NV, Gingrich JA, Garcia-Rill E, Bisagno V, Urbano FJ. Modulation of GABA release from the thalamic reticular nucleus by cocaine and caffeine: role of serotonin receptors. *J Neurochem.* 2016 Feb;136(3):526-35. doi: 10.1111/jnc.13398. Epub 2015 Nov 12. PMID: 26484945; PMCID: PMC5367149.

2. Fedotova IuO, Pivina SG, Akulova VK, Ordian NÉ. [Peculiarities for action of combined administration of NAN-190 and ketanserine with low dose of 17β-estradiol on depression-like behavior in prenatally stressed ovariectomized rats]. *Russ Fiziol Zh Im I M Sechenova.* 2015 Jan;101(1):35-43. Russian. PMID: 25868324.

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7. Bioactivity

Biological target:

NAN-190 is a mixed antagonist and partial agonist of the serotonin (5-HT) receptor subtype 5-HT1A.

In vitro activity

Nan-190 was identified as an inhibitor of Nav1.7 sodium channels and animal experiments showed that NAN-190 significantly alleviated CFA-induced inflammatory pain. Mechanism studies demonstrated that NAN-190 was a state-dependent Nav1.7 blocker with IC₅₀ value on the inactivated state ten-fold more potent than that on the rest state. NAN-190 leftward-shifted the fast and slow inactivation curves about 9.07 mV and 38.56 mV, respectively, but had no effects on channel activation.

Reference: Life Sci. 2023 Apr 15;319:121520. <https://pubmed.ncbi.nlm.nih.gov/36828129/>

In vivo activity

The adult prenatally stressed OVX female offspring were chronically (during 14 days) treated by 5-HT(1A)-receptors antagonist--NAN-190 (0.1 mg/kg, s. c.) or 5-HT(2A/2C)-receptors antagonist--ketanserine (0.1 mg/kg, i. p.) alone, or in a combination with its preparations a low dose of 17β-estradiol (5.0 μg/rat, s. c.). Treatment with NAN-190 alone induced marked depressant-like effect, while NAN-190 administered in a combination with a low dose of 17β-estradiol resulted in an antidepressant-like effect in the FST in the prenatally stressed OVX females as compared to the control prenatally stressed female offspring. Administration of NAN-190 plus 17β-estradiol led to decreased frequency of rearing, exploratory and grooming behavior in prenatally stressed OVX female offspring in the OFT.

Reference: Ross Fiziol Zh Im I M Sechenova. 2015 Jan;101(1):35-43. <https://pubmed.ncbi.nlm.nih.gov/25868324/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.