

Product data sheet



MedKoo Cat#: 562977 Name: NAD-299 HCl CAS: 184674-99-5 Chemical Formula: C ₁₈ H ₂₄ ClFN ₂ O ₂ Exact Mass: 354.151 Molecular Weight: 354.8504	
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:

NAD-299 HCl is a high affinity 5-HT_{1A} receptor antagonist.

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
DMSO	35.48	100.0
Water	35.48	100.0

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.82 mL	14.09 mL	28.18 mL
5 mM	0.56 mL	2.82 mL	5.64 mL
10 mM	0.28 mL	1.41 mL	2.82 mL
50 mM	0.06 mL	0.28 mL	0.56 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. Jerning E, Rosqvist S, Mohell N. Nad-299 antagonises 5-HT-stimulated and spiperone-inhibited [35S]GTPgammaS binding in cloned 5-HT_{1A} receptors. *J Recept Signal Transduct Res.* 2002 Feb-Nov;22(1-4):483-95. doi: 10.1081/rrs-120014616. PMID: 12503636.

2. Johansson L, Sohn D, Thorberg SO, Jackson DM, Kelder D, Larsson LG, Rényi L, Ross SB, Wallsten C, Eriksson H, Hu PS, Jerning E, Mohell N, Westlind-Danielsson A. The pharmacological characterization of a novel selective 5-hydroxytryptamine_{1A} receptor antagonist, NAD-299. *J Pharmacol Exp Ther.* 1997 Oct;283(1):216-25. PMID: 9336327.

In vivo study

1. Kehr J, Hu XJ, Yoshitake T, Wang FH, Osborne P, Stenfors C, Ogren SO. The selective 5-HT_{1A} receptor antagonist NAD-299 increases acetylcholine release but not extracellular glutamate levels in the frontal cortex and hippocampus of awake rat. *Eur Neuropsychopharmacol.* 2010 Jul;20(7):487-500. doi: 10.1016/j.euroneuro.2010.03.003. Epub 2010 Apr 21. PMID: 20413275.

2. Pehrson R, Ojteg G, Ishizuka O, Andersson KE. Effects of NAD-299, a new, highly selective 5-HT_{1A} receptor antagonist, on bladder function in rats. *Naunyn Schmiedebergs Arch Pharmacol.* 2002 Dec;366(6):528-36. doi: 10.1007/s00210-002-0650-y. Epub 2002 Oct 17. PMID: 12444493.

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7. Bioactivity

Biological target:

NAD-299 HCl is a high affinity 5-HT_{1A} receptor antagonist.

In vitro activity

The only other receptors for which NAD-299 had affinity less than 1 microM were alpha-1 and beta adrenoceptors with K_i values of 260 and 340 nM, respectively. Thus, the selectivity of NAD-299 for 5-HT_{1A} receptors was more than 400 times. Like WAY-100635, NAD-299 competitively blocked 5-HT-induced inhibition of vasoactive intestinal peptide-stimulated cAMP production in GH4ZD10 cells and had no intrinsic activity.

Reference: J Pharmacol Exp Ther. 1997 Oct;283(1):216-25. <https://pubmed.ncbi.nlm.nih.gov/9336327/>

In vivo activity

The effects of the HT(1A) receptor antagonist NAD-299 on extracellular acetylcholine (ACh) and glutamate (Glu) levels in the frontal cortex (FC) and ventral hippocampus (HPC) of the awake rats were investigated by the use of in vivo microdialysis. Systemic administration of NAD-299 (0.3; 1 and 3micromol/kg s.c.) caused a dose-dependent increase in ACh levels in FC and HPC (peak value of 209% and 221%, respectively) and this effect was comparable to that induced by donepezil (2.63micromol/kg s.c.).

Reference: Eur Neuropsychopharmacol. 2010 Jul;20(7):487-500. <https://pubmed.ncbi.nlm.nih.gov/20413275/>

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.