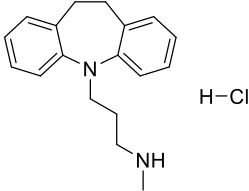


Product data sheet



MedKoo Cat#: 329018 Name: Desipramine Hydrochloride CAS#: 58-28-6 (HCl) Chemical Formula: C ₁₈ H ₂₃ ClN ₂ Molecular Weight: 302.846	
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:

Desipramine Hydrochloride, also known as Norpramin and EX-4355, is a tricyclic dibenzazepine compound that potentiates neurotransmission. Desipramine Hydrochloride selectively blocks reuptake of norepinephrine from the neural synapse, and also appears to impair serotonin transport. Desipramine Hydrochloride also possesses minor anticholinergic activity, through its affinity to muscarinic receptors.

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	80.0	264.16
Ethanol	60.0	198.12
Water	45.14	149.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.30 mL	16.51 mL	33.02 mL
5 mM	0.66 mL	3.30 mL	6.60 mL
10 mM	0.33 mL	1.65 mL	3.30 mL
50 mM	0.07 mL	0.33 mL	0.66 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. Shin JK, Kim JS. Cytoprotection of rat hepatocytes by desipramine in a model of simulated ischemia/reperfusion. *Biochem Biophys Rep.* 2021 Jul 15;27:101075. doi: 10.1016/j.bbrep.2021.101075. PMID: 34337165; PMCID: PMC8313843.

In vivo study

1. Branco-de-Almeida LS, Franco GCN, Castro ML, Vieira MS, Galvão-Moreira LV, Cortelli SC, Anbinder AL, Kawai T, Rosalen PL. Protective effects of desipramine on alveolar bone in experimental periodontitis. *J Periodontol.* 2020 Dec;91(12):1694-1703. doi: 10.1002/JPER.19-0569. Epub 2020 Jun 5. PMID: 32294250.

2. Spulber S, Conti M, Elberling F, Raciti M, Borroto-Escuela DO, Fuxe K, Ceccatelli S. Desipramine restores the alterations in circadian entrainment induced by prenatal exposure to glucocorticoids. *Transl Psychiatry.* 2019 Oct 17;9(1):263. doi: 10.1038/s41398-019-0594-3. PMID: 31624238; PMCID: PMC6797805.

7. Bioactivity

Biological target:

Product data sheet



Desipramine hydrochloride is an inhibitor of norepinephrine transporter (NET), 5-HT transporter (SERT) and dopamine transporter (DAT) with K_{is} of 4, 61 and 78,720 nM, respectively.

In vitro activity

To simulate hepatic ischemia, rat hepatocytes were incubated in anaerobic, nutrient-deficient, and acidic KRH buffer (pH 6.2) at 37°C. After 4 h of ischemic conditions, the anaerobic buffer was replaced with aerobic KRH buffer at pH 7.4. Similar to a previous report, hepatocyte death progressively increased after reperfusion (Fig. 1A). DMI (desipramine) at 5 μ M significantly reduced cell death during 120 min of reperfusion, while a lower concentration (1 μ M) did not.

Reference: Biochem Biophys Rep. 2021 Sep; 27: 101075. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8313843/>

In vivo activity

Alveolar bone loss was significantly reduced in the ligature + desipramine group ($P < 0.05$), whereas gingival collagen degradation was like the ligature group ($P > 0.05$). Desipramine administration downregulated mRNA expressions of IL-1 β , iNOS, COX-2, and TIMP-1 when compared to vehicle alone in the ligature group ($P < 0.05$). MMP-9 expression and MMP-9/TIMP-1 ratio were similar among rats with ligature-induced periodontitis ($P > 0.05$); however, MMP-9 activity was lower in the group treated with desipramine ($P < 0.05$).

Reference: J Periodontol. 2020 Dec;91(12):1694-1703. <https://pubmed.ncbi.nlm.nih.gov/32294250/>

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.