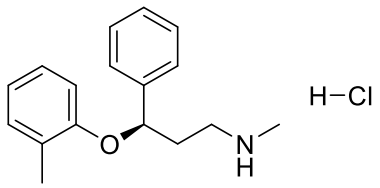
Product data sheet

MedKoo Cat#: 317256 Name: Atomoxetine HCl CAS#: 82248-59-7 (HCl) Chemical Formula: $C_{17}H_{22}ClNO$ Exact Mass: 255.16231 Molecular Weight: 291.819	
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:
Atomoxetine is a norepinephrine reuptake inhibitor approved for the treatment of attention deficit hyperactivity disorder (ADHD). The brand name is Strattera. The initial therapeutic effects of atomoxetine usually take 2–4 weeks to become apparent. There has been some suggestion that atomoxetine might be a helpful adjunct in people with major depression, especially in cases where ADHD occurs comorbidly to major depression.

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	62.67	214.76
DMF	30.0	102.80
Ethanol	33.5	114.80
PBS (pH 7.2)	2.0	6.85
Water	8.30	28.44

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.43 mL	17.13 mL	34.27 mL
5 mM	0.69 mL	3.43 mL	6.85 mL
10 mM	0.34 mL	1.71 mL	3.43 mL
50 mM	0.07 mL	0.34 mL	0.69 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. Ludolph AG, Udvardi PT, Schaz U, Henes C, Adolph O, Weigt HU, Fegert JM, Boeckers TM, Föhr KJ. Atomoxetine acts as an NMDA receptor blocker in clinically relevant concentrations. Br J Pharmacol. 2010 May;160(2):283-91. doi: 10.1111/j.1476-5381.2010.00707.x. PMID: 20423340; PMCID: PMC2874851.
2. Scherer D, Hassel D, Bloehs R, Zitron E, von Löwenstern K, Seyler C, Thomas D, Konrad F, Bürgers HF, Seemann G, Rottbauer W, Katus HA, Karle CA, Scholz EP. Selective noradrenaline reuptake inhibitor atomoxetine directly blocks hERG currents. Br J Pharmacol. 2009 Jan;156(2):226-36. doi: 10.1111/j.1476-5381.2008.00018.x. Epub 2009 Jan 16. PMID: 19154426; PMCID: PMC2697834.

In vivo study

Product data sheet

1. Alamri FF, Al Shoyaib A, Syeara N, Paul A, Jayaraman S, Karamyan ST, Arumugam TV, Karamyan VT. Delayed atomoxetine or fluoxetine treatment coupled with limited voluntary running promotes motor recovery in mice after ischemic stroke. Neural Regen Res. 2021 Jul;16(7):1244-1251. doi: 10.4103/1673-5374.301031. PMID: 33318401.
2. Salman A, El Beltagy M, Shatarat A, Alzghoul L, Oweis L, Al Antary N, Al Fegie S, Mohsen M, Salman S. Atomoxetine improves hippocampal cell proliferation but not memory in Doxorubicin-treated adult male rats. Vet Med Sci. 2020 Nov;6(4):1017-1024. doi: 10.1002/vms3.276. Epub 2020 Apr 27. PMID: 32342640; PMCID: PMC7738722.

7. Bioactivity

Biological target:

Atomoxetine hydrochloride is a potent and selective noradrenalin re-uptake inhibitor (Ki values are 5, 77 and 1451 nM for inhibition of radioligand binding to human NET, SERT and DAT respectively).

In vitro activity

Concentration-dependence of atomoxetine-induced hERG block was analysed in a HEK cell line stably expressing hERG channels using the whole-cell patch clamp technique. From a holding potential of −80 mV, a constant test pulse to +20 mV (400 ms) was applied, followed by a return pulse to −120 mV (400 ms) to elicit large inward tail currents (Figure 3, inset). Atomoxetine, over a range of concentrations (0.1–100 μmol·L^{-1}), reduced peak tail currents (n = 5–7, Figure 3). The dose–response curve was fitted using the Hill equation and yielded an IC_{50} of 6.26 ± 0.92 μmol·L^{-1} (n_H = 0.6 ± 0.06).

Reference: Br J Pharmacol. 2009 Jan; 156(2): 226–236. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2697834/

In vivo activity

The Bonferroni post hoc test revealed that there was a significant increase in the mean number of proliferating cells in the ATX (Atomoxetine)-treated rat group compared with saline-, DOX- and ATX + DOX-treated groups (p < .001), as shown in Figure 4. Moreover, co-administration of ATX and DOX significantly increased the mean number of Ki67 positive cells compared with the DOX-treated group (p < .05). The saline-treated group showed a significant increase in the mean number of Ki67 positive cells compared with the DOX-treated one (p < .001), as shown in Figure 4. Figure 5 shows a representative image of Ki67 positive proliferating cells within the DG counter-stained with haematoxylin stain.

Reference: Vet Med Sci. 2020 Nov; 6(4): 1017–1024. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7738722/