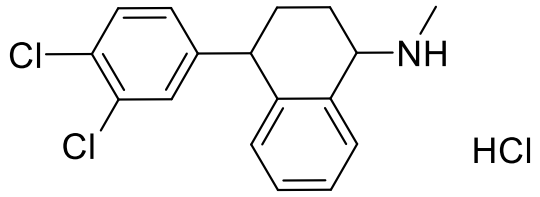
Product data sheet

MedKoo Cat#: 318692 Name: Sertraline HCl CAS#: 79559-97-0 (HCl) Chemical Formula: $C_{17}H_{18}Cl_3N$ Molecular Weight: 342.69	
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:

Sertraline, also known as Zoloft, is a selective serotonin uptake inhibitor that is used in the treatment of depression. Sertraline is primarily a selective serotonin reuptake inhibitor (SSRI) with a binding affinity towards the serotonin transporter of Ki=2.8 nM or in that range. Sertraline is also a dopamine reuptake inhibitor, (<50 nmol/L). However, this is not considered a tight binding, and this action is only 10% of its potency as a monoamine reuptake inhibitor. It is a σ1 receptor agonist with 5% of its SSRI potency, and an α1-adrenoreceptor antagonist with 1–10% of its SRI potency.

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	50	145.9
Water	2.86	8.35

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.92 mL	14.59 mL	29.18 mL
5 mM	0.58 mL	2.92 mL	5.84 mL
10 mM	0.29 mL	1.46 mL	2.92 mL
50 mM	0.06 mL	0.29 mL	0.58 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. Baldissera AB, Boia-Ferreira M, Basílio ABC, Resende JSS, Castro MAA, Chaim OM, Gremski LH, Veiga SS, Senff-Ribeiro A. Sertraline as a potential cancer therapeutic approach: Biological relevance of TCTP in breast cancer cell lines and tumors. Adv Med Sci. 2023 Sep;68(2):227-237. doi: 10.1016/j.advms.2023.06.001. Epub 2023 Jun 26. PMID: 37379765.
2. Matsushima Y, Terada K, Kamei C, Sugimoto Y. Sertraline inhibits nerve growth factor-induced neurite outgrowth in PC12 cells via a mechanism involving the sigma-1 receptor. Eur J Pharmacol. 2019 Jun 15;853:129-135. doi: 10.1016/j.ejphar.2019.03.032. Epub 2019 Mar 19. PMID: 30902656.

In vivo study

1. Zhou S, Ye D, Xia H, Xu H, Tang W, Tang Q, Bi F. Sertraline inhibits stress-induced tumor growth through regulating CD8 + T cell-mediated anti-tumor immunity. Anticancer Drugs. 2022 Oct 1;33(9):935-942. doi: 10.1097/CAD.0000000000001383. Epub 2022 Sep 5. PMID: 36066403.
2. Lan HW, Lu YN, Zhao XD, Jin GN, Lu JM, Jin CH, Ma J, Jin X, Xu X, Piao LX. New role of sertraline against Toxoplasma gondii-induced depression-like behaviours in mice. Parasite Immunol. 2021 Dec;43(12):e12893. doi: 10.1111/pim.12893. Epub 2021 Oct 20. PMID: 34637545.

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7. Bioactivity

Biological target:

Sertraline is selective for serotonin transporter (SERT) over the norepinephrine and dopamine transporters (IC50s = 520 and 720 nM, respectively).

In vitro activity

Sertraline shows a promise as a potential therapeutic option for breast cancer (BC), particularly in triple-negative BC, because of its ability to inhibit TCTP expression and enhance chemotherapeutic response. Sertraline treatment reduced translationally controlled tumor protein expression in BC cell lines, significantly impacting cell viability, clonogenicity, and migration. Sertraline sensitized triple-negative BC cell lines to cytotoxic chemotherapeutic drugs (doxorubicin and cisplatin).

Reference: Adv Med Sci. 2023 Sep;68(2):227-237. https://pubmed.ncbi.nlm.nih.gov/37379765/

In vivo activity

Sertraline significantly ameliorated depression-like behaviors in Toxoplasma gondii-infected mice and inhibited T. gondii proliferation. Toxoplasma significantly inhibited the activation of microglia and decreased levels of pro-inflammatory cytokines by down-regulating tumor necrosis factor receptor 1/nuclear factor-kappa B signaling pathway, thereby ameliorating the depression-like behaviors induced by T. gondii infection.

Reference: Parasite Immunol. 2021 Dec;43(12):e12893. https://pubmed.ncbi.nlm.nih.gov/34637545/

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.