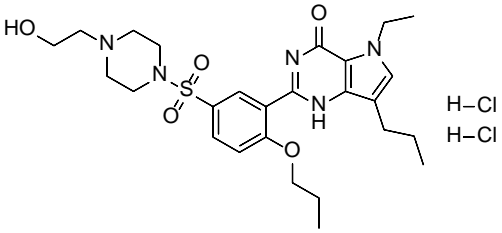


# Product data sheet



MedKoo Cat#: 565451 Name: Mirodenafil dihydrochloride CAS: 862189-96-6 (HCl) Chemical Formula: C <sub>26</sub> H <sub>39</sub> Cl <sub>2</sub> N <sub>5</sub> O <sub>5</sub> S Exact Mass: 603.2049 Molecular Weight: 604.588	
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:

Mirodenafil belongs to the drug class PDE5 inhibitors, which includes avanafil, sildenafil, tadalafil, udenafil, and vardenafil, and is the first-line treatment for erectile dysfunction.

## 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
DMF	25.0	41.35
DMSO	75.0	124.05
DMSO:PBS (pH 7.2) (1:9)	0.1	0.17
Ethanol	11.5	19.02
Water	3.0	4.96

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.65 mL	8.27 mL	16.54 mL
5 mM	0.33 mL	1.65 mL	3.31 mL
10 mM	0.17 mL	0.83 mL	1.65 mL
50 mM	0.03 mL	0.17 mL	0.33 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. Kim JJ, Han DH, Lim SH, Kim TH, Chae MR, Chung KJ, Kam SC, Jeon JH, Park JK, Lee SW. Effects of Ginkgo biloba extracts with mirodenafil on the relaxation of corpus cavernosal smooth muscle and the potassium channel activity of corporal smooth muscle cells. *Asian J Androl.* 2011 Sep;13(5):742-6. doi: 10.1038/aja.2010.184. Epub 2011 Apr 11. PMID: 21478894; PMCID: PMC3739598.

### In vivo study

1. Kang BW, Kim F, Cho JY, Kim S, Rhee J, Choung JJ. Phosphodiesterase 5 inhibitor mirodenafil ameliorates Alzheimer-like pathology and symptoms by multimodal actions. *Alzheimers Res Ther.* 2022 Jul 8;14(1):92. doi: 10.1186/s13195-022-01034-3. PMID: 35804462; PMCID: PMC9264543.

2. Roh JS, Jeong H, Lee B, Song BW, Han SJ, Sohn DH, Lee SG. Mirodenafil ameliorates skin fibrosis in bleomycin-induced mouse model of systemic sclerosis. *Anim Cells Syst (Seoul).* 2021 Nov 3;25(6):387-395. doi: 10.1080/19768354.2021.1995486. PMID: 35059138; PMCID: PMC8765282.

# Product data sheet



## 7. Bioactivity

### Biological target:

Mirodenafil (SK3530) dihydrochloride is an orally active, potent, reversible, and selective phosphodiesterase 5 (PDE5) inhibitor.

### In vitro activity

In electrophysiological studies, whole-cell currents were recorded by the conventional patch-clamp technique in cultured smooth muscle cells of the human corpus cavernosum. The corpus cavernosum was relaxed in response to GBE in a dose-dependent manner (from 0.64%±8.35% at 0.01 mg ml<sup>-1</sup> to 52.28% ± 11.42% at 1 mg ml<sup>-1</sup>). After pre-treatment with 0.03 mg ml<sup>-1</sup> of GBE, the relaxant effects of mirodenafil were increased at all concentrations.

Reference: Asian J Androl. 2011 Sep;13(5):742-6. <https://pubmed.ncbi.nlm.nih.gov/21478894/>

### In vivo activity

Here, mirodenafil is demonstrated to improve cognitive behavior in the APP-C105 mouse model. Mirodenafil not only reduced the A $\beta$  and phosphorylated tau burdens in vivo, but also ameliorated AD pathology induced by A $\beta$  through the modulation of the cGMP/PKG/CREB signaling pathway, glycogen synthase kinase 3 $\beta$  (GSK-3 $\beta$ ) activity, GR transcriptional activity, and the Wnt/ $\beta$ -catenin signaling in neuronal cells.

Reference: Alzheimers Res Ther. 2022 Jul 8;14(1):92. <https://pubmed.ncbi.nlm.nih.gov/35804462/>

*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.*