

Product data sheet



MedKoo Cat#: 413910 Name: DOV-216303 free base CAS: 66504-40-3 (free base) Chemical Formula: C ₁₁ H ₁₁ Cl ₂ N Exact Mass: 227.0269 Molecular Weight: 228.116	
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:

DOV-216303 free base is a potent triple serotonin, norepinephrine, and dopamine reuptake inhibitor, with IC₅₀ values of 14 nM, 20 nM and 78 nM for hSERT, hNET and hDAT, respectively. Has antidepressant-like effects and increases monoamine release in the prefrontal cortex of olfactory bulbectomized (OBX) rats.

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	125.0	547.97
Ethanol	100.0	438.37

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.38 mL	21.92 mL	43.84 mL
5 mM	0.88 mL	4.38 mL	8.77 mL
10 mM	0.44 mL	2.19 mL	4.38 mL
50 mM	0.09 mL	0.44 mL	0.88 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. Prickaerts J, De Vry J, Boere J, Kenis G, Quinton MS, Engel S, Melnick L, Schreiber R. Differential BDNF responses of triple versus dual reuptake inhibition in neuronal and astrocytoma cells as well as in rat hippocampus and prefrontal cortex. *J Mol Neurosci*. 2012 Sep;48(1):167-75. doi: 10.1007/s12031-012-9802-9. Epub 2012 May 13. PMID: 22581450; PMCID: PMC3413810.
2. Caldarone BJ, Paterson NE, Zhou J, Brunner D, Kozikowski AP, Westphal KG, Korte-Bouws GA, Prins J, Korte SM, Olivier B, Ghavami A. The novel triple reuptake inhibitor JZAD-IV-22 exhibits an antidepressant pharmacological profile without locomotor stimulant or sensitization properties. *J Pharmacol Exp Ther*. 2010 Dec;335(3):762-70. doi: 10.1124/jpet.110.174011. Epub 2010 Sep 23. PMID: 20864506; PMCID: PMC2993553.

In vivo study

1. Chu TH, Cummins K, Stys PK. The triple monoamine re-uptake inhibitor DOV 216,303 promotes functional recovery after spinal cord contusion injury in mice. *Neurosci Lett*. 2018 May 14;675:1-6. doi: 10.1016/j.neulet.2018.03.050. Epub 2018 Mar 22. PMID: 29578004.
2. Sørensen G, Husum H, Brennum LT, Bundgaard C, Montezinho LC, Mørk A, Wörtwein G, Woldbye DP. Addiction-related effects of DOV 216,303 and cocaine: A comparative study in the mouse. *Basic Clin Pharmacol Toxicol*. 2014 Jun;114(6):451-9. doi: 10.1111/bcpt.12182. Epub 2014 Jan 16. PMID: 24314270.

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7. Bioactivity

Biological target:

DOV-216,303 (Free Base) is a potent triple serotonin, norepinephrine, and dopamine reuptake inhibitor, with IC₅₀ values of 14 nM, 20 nM and 78 nM for hSERT, hNET and hDAT, respectively.

In vitro activity

In vitro, neither duloxetine nor DOV 216,303 altered intracellular BDNF levels in murine HT22 neuronal cells. In contrast, BDNF release was more effectively decreased following treatment with DOV 216,303 in these cells.

Reference: J Mol Neurosci. 2012 Sep;48(1):167-75. <https://pubmed.ncbi.nlm.nih.gov/22581450/>

In vivo activity

Results showed that DOV 216,303-treated mice recovered significantly better than vehicle treated mice starting at 14 days post injury until the end of the survival period. Lesion size of the DOV 216,303 treated mice was also smaller compared to that of vehicle treated mice. This study suggests DOV 216,303 as a potential therapeutic after spinal cord injury warrants further investigation.

Reference: Neurosci Lett. 2018 May 14;675:1-6. <https://pubmed.ncbi.nlm.nih.gov/29578004/>

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.