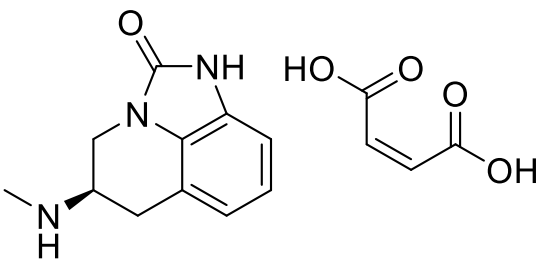


# Product data sheet



MedKoo Cat#: 326794 Name: Sumanirole maleate CAS#: 179386-44-8 (maleate) Chemical Formula: C <sub>15</sub> H <sub>17</sub> N <sub>3</sub> O <sub>5</sub> Molecular Weight: 319.32	
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:

Sumanirole, also known as PNU-95666, is a highly selective D2 receptor full agonist, the first of its kind to be discovered. It was developed for the treatment of Parkinson's disease and restless leg syndrome. While it has never been approved for medical use, it is a highly valuable tool compound for basic research to identify neurobiological mechanisms that are based on a dopamine D2-linked (vs. D1, D3, D4, and D5-linked) mechanism of action.

## 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	12.5	39.15
DMSO	16	50.11
PBS (pH 7.2)	5	15.66

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.13 mL	15.66 mL	31.32 mL
5 mM	0.63 mL	3.13 mL	6.26 mL
10 mM	0.31 mL	1.57 mL	3.13 mL
50 mM	0.06 mL	0.31 mL	0.63 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

- Zhou J, Peng C, Li Q, Yan X, Yang L, Li M, Cao X, Xie X, Chen D, Rao C, Huang S, Peng F, Pan X. Dopamine Homeostasis Imbalance and Dopamine Receptors-Mediated AC/cAMP/PKA Pathway Activation are Involved in Aconitine-Induced Neurological Impairment in Zebrafish and SH-SY5Y Cells. *Front Pharmacol.* 2022 Mar 18;13:837810. doi: 10.3389/fphar.2022.837810. Erratum in: *Front Pharmacol.* 2023 May 16;14:1219561. PMID: 35370746; PMCID: PMC8971779.
- Weissenrieder JS, Reed JL, Green MV, Moldovan GL, Koubek EJ, Neighbors JD, Hohl RJ. The Dopamine D2 Receptor Contributes to the Spheroid Formation Behavior of U87 Glioblastoma Cells. *Pharmacology.* 2020;105(1-2):19-27. doi: 10.1159/000502562. Epub 2019 Oct 23. PMID: 31645049; PMCID: PMC1077736.

### In vivo study

- Weber M, Chang WL, Breier MR, Yang A, Millan MJ, Swerdlow NR. The effects of the dopamine D2 agonist sumanirole on prepulse inhibition in rats. *Eur Neuropsychopharmacol.* 2010 Jun;20(6):421-5. doi: 10.1016/j.euroneuro.2010.02.011. Epub 2010 Mar 25. PMID: 20346635; PMCID: PMC2864324.

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- Singer C, Lamb J, Ellis A, Layton G; Sumanirole for Early Parkinson's Disease Study Group. A comparison of sumanirole versus placebo or ropinirole for the treatment of patients with early Parkinson's disease. *Mov Disord.* 2007 Mar 15;22(4):476-82. doi: 10.1002/mds.21361. PMID: 17318839.

## 7. Bioactivity

### Biological target:

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Sulforaphane is an inducer of Nrf2 and is also an inhibitor of histone deacetylase (HDAC) and NF- $\kappa$ B.

### In vitro activity

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Dopamine homeostasis imbalance and dopamine receptors (DRs)-mediated AC/cAMP/PKA pathway activation might be vital mechanisms underlying aconitine-induced neurological injury. SCH23390 and sumanirole also reduced aconitine-induced cytotoxicity by inhibiting the AC/cAMP/PKA pathway in vitro.

Reference: *Front Pharmacol.* 2022 Mar 18;13:837810. <https://pubmed.ncbi.nlm.nih.gov/35370746/>

### In vivo activity

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Sumanirole was compared to placebo and ropinirole in a study involving 614 early Parkinson's disease patients. Over 40 weeks, sumanirole and ropinirole showed significant improvement in UPDRS II + III scores compared to placebo. However, noninferiority of sumanirole to ropinirole was not established. Sumanirole exhibited better tolerability than ropinirole.

Reference: *Mov Disord.* 2007 Mar 15;22(4):476-82. <https://pubmed.ncbi.nlm.nih.gov/17318839/>

*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.*