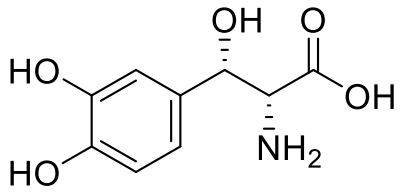
Product data sheet

MedKoo Cat#: 314206 Name: Droxidopa CAS#: 23651-95-8 Chemical Formula: $C_9H_{11}NO_5$ Exact Mass: 213.06372 Molecular Weight: 213.19	
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:

Droxidopa is a synthetic amino acid precursor which acts as a prodrug to the neurotransmitters norepinephrine (noradrenaline) and epinephrine (adrenaline) and it is used to increase the concentrations of these neurotransmitters in the body and brain. Unlike norepinephrine and epinephrine themselves, droxidopa is capable of crossing the protective bloodÂ–brain barrier (BBB). It is metabolized by aromatic L-amino acid decarboxylase (AAAD), also known as DOPA decarboxylase (DDC). Droxidopa works by increasing the levels of norepinephrine and epinephrine in the peripheral nervous system (PNS), which induces tachycardia or increased heart rate and hypertension or increased blood pressure, thus enabling the body to maintain blood flow upon and while standing. (Source: http://en.wikipedia.org/wiki/Droxidopa).

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	1.80	8.44

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.69 mL	23.45 mL	46.91 mL
5 mM	0.94 mL	4.69 mL	9.38 mL
10 mM	0.47 mL	2.35 mL	4.69 mL
50 mM	0.09 mL	0.47 mL	0.94 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

TBD

In vivo study

1. Dela Peña I, Shen G, Shi WX. Droxidopa alters dopamine neuron and prefrontal cortex activity and improves attention-deficit/hyperactivity disorder-like behaviors in rats. Eur J Pharmacol. 2021 Feb 5;892:173826. doi: 10.1016/j.ejphar.2020.173826. Epub 2020 Dec 19. PMID: 33347825.

2. Coll M, Rodriguez S, Raurell I, Ezkurdia N, Brull A, Augustin S, Guardia J, Esteban R, Martell M, Genescà J. Droxidopa, an oral norepinephrine precursor, improves hemodynamic and renal alterations of portal hypertensive rats. Hepatology. 2012 Nov;56(5):1849-60. doi: 10.1002/hep.25845. Epub 2012 Oct 14. PMID: 22610782.

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7. Bioactivity

Biological target:

Droxidopa (L-DOPS) is a psychoactive drug and acts as a prodrug to the neurotransmitters norepinephrine (noradrenaline) and epinephrine (adrenaline).

In vitro activity

TBD

In vivo activity

This study aimed to evaluate the effects of droxidopa (an oral synthetic precursor of norepinephrine) on the hemodynamic and renal alterations of portal hypertensive rats. The acute administration of droxidopa in PVL and BDL rats caused a significant and maintained increase in arterial pressure and mesenteric arterial resistance, with a significant decrease of mesenteric arterial and portal blood flow, without changing portal pressure and renal blood flow. Chronic droxidopa therapy in BDL rats produced the same beneficial hemodynamic effects observed in the acute study, did not alter liver function parameters, and caused a 50% increase in 24-hour diuresis volume (7.4 ± 0.9 mL/100g in BDL vehicle versus 11.8 ± 2.5 mL/100g in BDL droxidopa; P = 0.01). Droxidopa-treated rats also showed a decreased ratio of p-eNOS/eNOS and p-AKT/AKT and increased activity of RhoK in SMA. The same chronic treatment in CCl(4) rats caused similar hemodynamic effects and produced significant increases in diuresis volume and 24-hour natriuresis (0.08 ± 0.02 mmol/100g in CCl(4) vehicle versus 0.23 ± 0.03 mmol/100g in CCl(4) droxidopa; P = 0.014).

Reference: Hepatology. 2012 Nov;56(5):1849-60. https://pubmed.ncbi.nlm.nih.gov/22610782/

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.