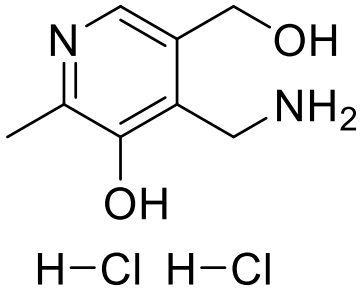
Product data sheet

MedKoo Cat#: 326918 Name: Pyridoxamine dihydrochloride CAS#: 524-36-7 (HCl) Chemical Formula: $C_8H_{14}Cl_2N_2O_2$ Molecular Weight: 241.11	
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:
Pyridoxamine, also known as K-163, is a form of vitamin B6.

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	120	497.70
Water	120	497.70

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	4.15 mL	20.74 mL	41.47 mL
5 mM	0.83 mL	4.15 mL	8.29 mL
10 mM	0.41 mL	2.07 mL	4.15 mL
50 mM	0.08 mL	0.41 mL	0.83 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. Lee SH, Tsutsui M, Matsunaga A, Oe T. Lipid hydroperoxide-derived insulin resistance and its inhibition by pyridoxamine in skeletal muscle cells. Toxicol Res. 2022 Nov 29;39(1):147-156. doi: 10.1007/s43188-022-00155-z. PMID: 36726824; PMCID: PMC9839902.
2. Aghamohammadi M, Sirouspour M, Goncalves AS, França TCC, LaPlante SR, Shahdousti P. Modeling studies on the role of vitamins B1 (thiamin), B3 (nicotinamide), B6 (pyridoxamine), and caffeine as potential leads for the drug design against COVID-19. J Mol Model. 2022 Nov 7;28(12):380. doi: 10.1007/s00894-022-05356-9. PMID: 36342543; PMCID: PMC9640828.

In vivo study

1. Hanssen NMJ, Tikellis C, Pickering RJ, Dragoljevic D, Lee MKS, Block T, Scheijen JL, Wouters K, Miyata T, Cooper ME, Murphy AJ, Thomas MC, Schalkwijk CG. Pyridoxamine prevents increased atherosclerosis by intermittent methylglyoxal spikes in the aortic arches of ApoE-/- mice. Biomed Pharmacother. 2023 Feb;158:114211. doi: 10.1016/j.biopha.2022.114211. Epub 2023 Jan 3. PMID: 36916437.
2. Reeve EH, Kronquist EK, Wolf JR, Lee B, Khurana A, Pham H, Cullen AE, Peterson JA, Meza A, Colton Bramwell R, Villasana L, Machin DR, Henson GD, Walker AE. Pyridoxamine treatment ameliorates large artery stiffening and cerebral artery endothelial dysfunction in old mice. J Cereb Blood Flow Metab. 2023 Feb;43(2):281-295. doi: 10.1177/0271678X221130124. Epub 2022 Oct 2. PMID: 36189840; PMCID: PMC9903220.

7. Bioactivity

Product data sheet

Biological target:

Pyridoxylamine dihydrochloride is an advanced glycation end production (AGEs) and lipoxidation end products (ALEs) inhibitor, to protect against diabetes-induced retinal vascular lesions.

In vitro activity

Pyridoxamine prevents insulin resistance caused by lipid hydroperoxide-derived aldehyde, specifically 4-oxo-2(E)-nonenal (ONE), which is known to induce insulin resistance by modifying proteins involved in insulin signaling. L6 skeletal muscle cells were treated with ONE, resulting in a decreased glucose uptake. Pyridoxamine treatment restored glucose uptake in these cells and prevented insulin resistance.

Reference: Toxicol Res. 2022 Nov 29;39(1):147-156. https://pubmed.ncbi.nlm.nih.gov/36726824/

In vivo activity

In this study, normoglycemic mice were injected with MGO over 10 weeks to mimic hyperglycemia-related MGO surges seen in diabetic cardiovascular disease. Pyridoxamine, administered with MGO, prevented atherosclerosis in the aortic arch, reduced circulating immune cells, and lowered inflammatory gene expression, indicating its potential to mitigate vascular damage and reduce cardiovascular risk in diabetes.

Reference: Biomed Pharmacother. 2023 Feb;158:114211. https://pubmed.ncbi.nlm.nih.gov/36916437/

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.