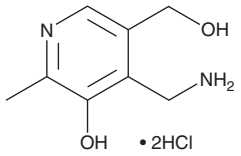
PRODUCT INFORMATION

Pyridoxamine (hydrochloride)

Item No. 33899

CAS Registry No.:	524-36-7
Formal Name:	4-(aminomethyl)-5-hydroxy-6-methyl-3-pyridinemethanol, dihydrochloride
Synonym:	Pyridoxylamine
MF:	$C_8H_{12}N_2O_2$ • 2HCl
FW:	241.1
Purity:	≥98%
UV/Vis.:	λ_{max}: 292 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Pyridoxamine (hydrochloride) is supplied as a solid. A stock solution may be made by dissolving the pyridoxamine (hydrochloride) in the solvent of choice, which should be purged with an inert gas. Pyridoxamine (hydrochloride) is soluble in the organic solvent DMSO. The solubility of pyridoxamine (hydrochloride) in DMSO is approximately 1 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of pyridoxamine (hydrochloride) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of pyridoxamine (hydrochloride) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Pyridoxamine is a 4-methylamine form of vitamin B_6 that is converted to pyridoxal 5'-phosphate (Item No. 20352), the active form of vitamin B_6, and an important cofactor for metabolism.[1] It scavenges isoketals in cell-free assays and inhibits the formation of lysyl-levuglandin-lactam adducts in dazoxiben-stimulated isolated human platelets when used at concentrations of 0.1 and 1 mM.[2] Pyridoxamine (1 g/L in the drinking water) inhibits the development of acellular capillaries and accumulation of N^{ε}-(1-carboxymethyl)-L-lysine (CML; Item No. 16483) in the retina in a rat model of diabetes induced by streptozotocin (STZ; Item No. 13104).[3] It reverses STZ-induced deficits in the novel object recognition task in a rat model of diabetes when administered in the drinking water at concentrations of 0.4 and 1 g/L.[4]

References

1. Kohlmeier, M. Water-soluble vitamins and nonnutrients. *Nutrient metabolism*. Kohlmeier, M., editor, 2nd ed., *Elsevier* (2015).
2. Davies, S.S., Brantley, E.J., Voziyan, P.A., *et al.* Pyridoxamine analogues scavenge lipid-derived γ-ketoaldehydes and protect against H_2O_2-mediated cytotoxicity. *Biochemistry* **45(51)**, (2006).
3. Stitt, A., Gardiner, T.A., Alderson, N.L., *et al.* The AGE inhibitor pyridoxamine inhibits development of retinopathy in experimental diabetes. *Diabetes* **51(9)**, 2826-2832 (2002).
4. Kassab, S., Begley, P., Church, S.J., *et al.* Cognitive dysfunction in diabetic rats is prevented by pyridoxamine treatment. A multidisciplinary investigation. *Mol. Metab.* **28**, 107-119 (2019).

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