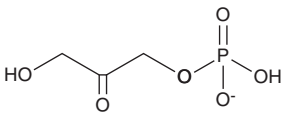
PRODUCT INFORMATION

Dihydroxyacetone Phosphate (magnesium salt hydrate)

Item No. 34641

Formal Name: 3-hydroxy-2-oxopropyl hydrogen phosphate, hemimagnesium salt hydrate
Synonyms: DHAP, Glycerone Phosphate
MF: $C_3H_6O_6P \bullet 1/2Mg\ [XH_2O]$
FW: 181.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



$\bullet\ 1/2Mg^{2+}\ [XH_2O]$

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

Laboratory Procedures

Dihydroxyacetone phosphate (magnesium salt hydrate) is supplied as a solid. A stock solution may be made by dissolving the dihydroxyacetone phosphate (magnesium salt hydrate) in the solvent of choice, which should be purged with an inert gas. Dihydroxyacetone phosphate (magnesium salt hydrate) is soluble in the organic solvent dimethyl formamide at a concentration of 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 dihydroxyacetone phosphate (magnesium salt hydrate) can be prepared by directly dissolving the solid in aqueous buffers. The solubility of dihydroxyacetone phosphate (magnesium salt hydrate) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Dihydroxyacetone phosphate is a precursor in the biosynthesis of glycerolipids.[1] It is produced by the glycolytic enzyme fructose-1,6-bisphosphate aldolase or by isomerization of glyceraldehyde-3-phosphate (GADP; Item No. 17865) by triosephosphate isomerase.[2] Erythrocyte levels of dihydroxyacetone phosphate are increased in patients with triosephosphate isomerase deficiency, an inborn error of metabolism characterized by hemolytic anemia and progressive neurological dysfunction.[3]

References

1. Dodds, P.F., Gurr, M.I., and Brindley, D.N. The glycerol phosphate, dihydroxyacetone phosphate and monoacylglycerol pathways of glycerolipid synthesis in rat adipose-tissue homogenates. *Biochem J.* **160(3)**, 693-700 (1976).
2. Miyazawa, H., Yamaguchi, Y., Sugiura, Y., *et al.* Rewiring of embryonic glucose metabolism via suppression of PFK-1 and aldolase during mouse chorioallantoic branching. *Development* **144(1)**, 63-73 (2017).
3. Orosz, F., Vértessy, B.G., Hollán, S., *et al.* Triosephosphate isomerase deficiency: Predictions and facts. *J. Theor. Biol.* **182(3)**, 437-447 (1996).

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