

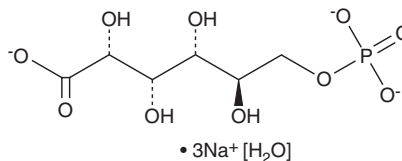
PRODUCT INFORMATION



6-Phosphogluconic Acid (sodium salt hydrate)

Item No. 43388

Formal Name: 6-(dihydrogen phosphate), D-gluconic acid, trisodium salt hydrate
Synonyms: NSC 316735, 6-PGA, 6-Phospho-D-gluconate, 6-Phosphogluconate
MF: $C_6H_{10}O_{10}P \cdot 3Na [XH_2O]$
FW: 273.1
Purity: $\geq 95\%$
Supplied as: A solid
Storage: $-20^\circ C$
Stability: ≥ 4 years



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

Laboratory Procedures

6-Phosphogluconic acid (sodium salt hydrate) is supplied as a solid. Aqueous solutions of 6-phosphogluconic acid (sodium salt hydrate) can be prepared by directly dissolving the solid in aqueous buffers. 6-Phosphogluconic acid (sodium salt hydrate) is soluble (≥ 10 mg/ml) in PBS (pH 7.2). We do not recommend storing the aqueous solution for more than one day.

Description

6-Phosphogluconic acid is an intermediate in the oxidative phase of the pentose phosphate pathway.^{1,2} It is formed from 6-phosphoglucono- δ -lactone by lactonase and is decarboxylated by 6-phosphogluconate dehydrogenase to form ribulose-5-phosphate. 6-Phosphogluconic acid inhibits glucose-6-phosphate isomerase with K_i values of 48 and 42 μM using glucose-6-phosphate or fructose-6-phosphate as the substrates, respectively.¹ It has been used as a cross-linking agent in the formation of hydrogels.² 6-Phosphogluconic acid has also been conjugated to nanoparticles to modulate zeta potential.³

References

1. Berg, J.M., Tymoczko, J.L., and Stryer, L. *Biochemistry*. 5th edition, W. H. Freeman, New York (2002).
2. Gumaa, K.A. and McLean, P. The pentose phosphate pathway of glucose metabolism: Enzyme profiles and transient and steady-state content of intermediates of alternative pathways of glucose metabolism in Krebs ascites cells. *Biochem. J.* **115(5)**, 1009-1029 (1969).
3. Gaitonde, M.K., Murray, E., and Cunningham, V.J. Effect of 6-phosphogluconate on phosphoglucose isomerase in rat brain in vitro and in vivo. *J. Neurochem.* **52(5)**, 1348-1352 (1989).
4. Martínez-Martínez, M., Rodríguez-Berna, G., Gonzalez-Alvarez, I., et al. Ionic hydrogel based on chitosan cross-linked with 6-phosphogluconic trisodium salt as a drug delivery system. *Biomacromolecules* **19(4)**, 1294-1304 (2018).
5. Bonengel, S., Prüfert, F., Perera, G., et al. Polyethylene imine-6-phosphogluconic acid nanoparticles - a novel zeta potential changing system. *Int. J. Pharm.* **483(1-2)**, 19-25 (2015).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM