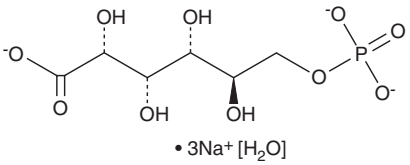
PRODUCT INFORMATION

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:	$C_6H_{10}O_{10}P \bullet 3Na\ [XH_2O]$
FW:	273.1
Purity:	≥95%
Supplied as:	A solid
Storage:	-20°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).
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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).

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