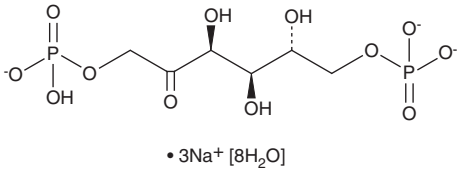
PRODUCT INFORMATION

D-Fructose-1,6-bisphosphate (sodium salt hydrate)

Item No. 20516

CAS Registry No.: 81028-91-3
Formal Name: 1,6-*bis*(dihydrogen phosphate)-D-fructose, trisodium salt, octahydrate
Synonym: D-Fructose-1,6-diphosphate
MF: $C_6H_{11}O_{12}P_2 \bullet 3Na\ [8H_2O]$
FW: 550.2
Purity: ≥95%
Supplied as: A crystalline solid
Storage: Room temperature
Stability: ≥4 years



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

Laboratory Procedures

D-Fructose-1,6-bisphosphate (sodium salt hydrate) is supplied as a crystalline solid. Aqueous solutions of D-fructose-1,6-bisphosphate (sodium salt hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-fructose-1,6-bisphosphate (sodium salt hydrate) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

D-Fructose-1,6-bisphosphate is an intermediate in carbohydrate metabolism, including glycolysis and gluconeogenesis. During glycolysis, it is generated by the phosphorylation of fructose-6-phosphate by phosphofructokinase. The reverse reaction, mediated by fructose-1,6-bisphosphatase-1, is one of the rate-limiting steps in gluconeogenesis.[1,2] The same reaction occurs within chloroplasts in plants as part of the reductive pentose phosphate cycle.[3] Because cancer cells adopt glycolysis as a major source of metabolic energy production, this pathway has become a major target for cancer chemotherapy.[4]

References

1. Marcus, F. and Hosey, M.M. Purification and properties of liver fructose 1,6-bisphosphatase from C57BL/KsJ normal and diabetic mice. *J. Biol. Chem.* **255(6)**, 2481-2486 (1980).
2. Van Den Berghe, G. Disorders of gluconeogenesis. *J. Inher. Metab. Dis.* **19**, 470-477 (1996).
3. Wolosiuk, R.A., Ballicora, M.A., and Hagelin, K. The reductive pentose phosphate cycle for photosynthetic CO_2 assimilation: Enzyme modulation. *FASEB J.* **7**, 622-637 (1993).
4. Seo, M., Kim, J.-D., Neau, D., *et al.* Structure-based development of small molecule PFKFB3 inhibitors: A framework for potential cancer therapeutic agents targeting the Warburg effect. *PLoS One* **6(9)**, e24179 (2011).

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