

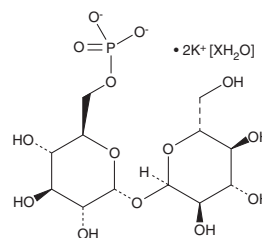
PRODUCT INFORMATION



Trehalose 6-phosphate (potassium salt hydrate)

Item No. 18925

Formal Name: α -D-glucopyranosyl α -D-glucopyranoside 6-(dihydrogen phosphate), dipotassium salt, hydrate
MF: $C_{12}H_{21}O_{14}P \cdot 2K [XH_2O]$
FW: 498.5
Purity: $\geq 95\%$
Supplied as: A crystalline solid
Storage: $-20^{\circ}C$
Stability: ≥ 2 years



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

Laboratory Procedures

Trehalose 6-phosphate (potassium salt hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the trehalose 6-phosphate (potassium salt hydrate) in water. The solubility of trehalose 6-phosphate (potassium salt hydrate) in water is approximately 50 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Trehalose is a natural non-reducing disaccharide found in plants, invertebrates, fungi, and bacteria.^{1,2} In addition to roles as an energy source and stress protectant, trehalose can function as a signaling molecule.^{3,4} Trehalose 6-phosphate is an intermediate in the biosynthesis of trehalose. It is generated from UDP-glucose and glucose 6-phosphate by trehalose 6-phosphate synthase (TPS or otsA).⁵ In plants, changes in trehalose 6-phosphate levels positively correlate with diurnal changes in sucrose and may regulate diverse processes, including starch degradation and flowering.^{3,6}

References

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2. Goddijn, O.J., Verwoerd, T.C., Voogd, E., et al. Inhibition of trehalase activity enhances trehalose accumulation in transgenic plants. *Plant Physiol.* **113(1)**, 181-190 (1997).
3. Lunn, J.E., Delorge, I., Figueroa, C.M., et al. Trehalose metabolism in plants. *Plant J.* **79(4)**, 544-567 (2014).
4. Henry, C., Bledsoe, S.W., Siekman, A., et al. The trehalose pathway in maize: Conservation and gene regulation in response to the diurnal cycle and extended darkness. *J. Exp. Bot.* **65(20)**, 5959-5973 (2014).
5. Padilla, L., Krämer, R., Stephanopoulos, G., et al. Overproduction of trehalose: Heterologous expression of *Escherichia coli* trehalose-6-phosphate synthase and trehalose-6-phosphate phosphatase in *Corynebacterium glutamicum*. *Appl. Environ. Microbiol.* **70(1)**, 370-376 (2004).
6. Wahl, V., Ponnu, J., Schlereth, A., et al. Regulation of flowering by trehalose-6-phosphate signaling in *Arabidopsis thaliana*. *Science* **339(6120)**, 704-707 (2013).

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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