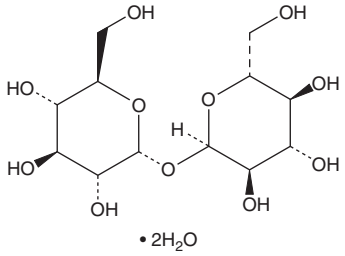
PRODUCT INFORMATION

Trehalose (hydrate)

Item No. 20517

CAS Registry No.:	6138-23-4
Formal Name:	α-D-glucopyranosyl-α-D-glucopyranoside, dihydrate
Synonyms:	D-(+)-Trehalose
MF:	$C_{12}H_{22}O_{11} \bullet 2H_2O$
FW:	378.3
Purity:	≥95%
Supplied as:	A crystalline solid
Storage:	Room temperature
Stability:	≥4 years
Item Origin:	Plant/Amylum



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

Laboratory Procedures

Trehalose (hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the trehalose (hydrate) in the solvent of choice, which should be purged with an inert gas. Trehalose (hydrate) is soluble in the organic solvent DMSO. The solubility of trehalose (hydrate) in this solvent is approximately 0.5 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 trehalose (hydrate) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of trehalose (hydrate) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Trehalose is a natural non-reducing disaccharide composed of two α-glucose units. It is found in all major groups of organisms except vertebrates, has biological functions as an osmolyte, storage reserve, and stress protectant, and has diverse commercial applications.[1-3] Trehalose can also induce or enhance autophagy.[4]

References

1. Figueroa C.M., and Lunn, J.E. Tale of two sugars: Trehalose 6-phosphate and sucrose. *Plant Physiol.* **172(1)**, 7-27 (2016).
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. Walmagh, M., Zhao, R., and Desmet, T. Trehalose. Analogues: Latest insights in properties and biocatalytic production. *International Journal of Molecular Sciences* **16(6)**, 13729-13745 (2015).
4. Ghavami, S., Shojaei, S., Yeganeh, B., *et al*. Autophagy and apoptosis dysfunction in neurogegenerative disorders. *Progress in Neurobiology* **112**, 24-49 (2014).

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