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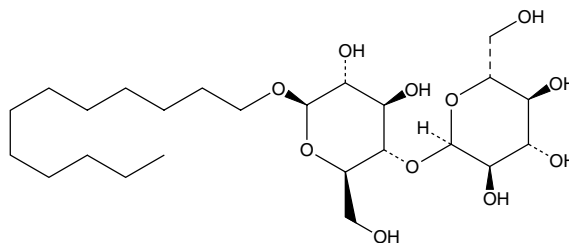
Product Information



n-Dodecyl-β-D-maltoside

Item No. 16494

CAS Registry No.: 69227-93-6
Formal Name: dodecyl 4-O-α-D-glucopyranosyl-β-D-glucopyranoside
Synonyms: DDM, Dodecyl Maltoside
MF: C₂₄H₄₆O₁₁
FW: 510.6
Purity: ≥95%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

For long term storage, we suggest that n-dodecyl-β-D-maltoside be stored as supplied at -20°C. It should be stable for at least two years.

n-Dodecyl-β-D-maltoside is supplied as a crystalline solid. A stock solution may be made by dissolving the n-dodecyl-β-D-maltoside in the solvent of choice. n-Dodecyl-β-D-maltoside is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of n-dodecyl-β-D-maltoside in ethanol and DMSO is approximately 10 mg/ml and approximately 20 mg/ml in DMF.

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 n-dodecyl-β-D-maltoside can be prepared by directly dissolving the crystalline solid. The solubility of n-dodecyl-β-D-maltoside in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

n-Dodecyl-β-D-maltoside is a non-ionic detergent commonly used to solubilize membrane-associated proteins.^{1,2} In particular, it helps retain the native conformation and activity of membrane-associated proteins, and facilitates the reforming of these proteins after denaturation.³⁻⁵ The critical micelle concentration of n-dodecyl-β-D-maltoside is approximately 0.18 mM in water, decreases in the presence of sodium chloride or sucrose, and increases in urea.⁶

References

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2. Rouse, S.L., Marcoux, J., Robinson, C.V., *et al.* Dodecyl maltoside protects membrane proteins *in vacuo*. *Biophys. J.* **105**(3), 648-656 (2013).
3. Koch, K.-W. Purification and identification of photoreceptor guanylate cyclase. *J. Biol. Chem.* **266**(13), 8634-8637 (1991).
4. De Foresta, B., Henao, F., and Chameil, P. Cancellation of the cooperativity of Ca²⁺ binding to sarcoplasmic reticulum Ca²⁺-ATPase by the non-ionic detergent dodecylmaltoside. *Eur. J. Biochem.* **223**(2), 359-369 (1994).
5. Zardeneta, G. and Horowitz, P.M. Micelle-assisted protein folding. Denatured rhodanese binding to cardiolipin-containing lauryl maltoside micelles results in slower refolding kinetics but greater enzyme reactivation. *J. Biol. Chem.* **267**(9), 5811-5816 (1992).
6. Walter, A., Kuehl, G., Barnes, K., *et al.* The vesicle-to-micelle transition of phosphatidylcholine vesicles induced by nonionic detergents: Effects of sodium chloride, sucrose and urea. *Biochim. Biophys. Acta* **1508**(1-2), 20-33 (2000).

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