

PRODUCT INFORMATION



Concanavalin A

Item No. 14951

CAS Registry No.: 11028-71-0
Supplied as: A lyophilized powder
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Canavalia ensiformis*

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

Laboratory Procedures

Concanavalin A is supplied as a lyophilized powder. A stock solution may be made by dissolving the lyophilized powder in the solvent of choice, which should be purged with an inert gas. Concanavalin A is soluble in the organic solvent DMSO at a concentration of approximately 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 concanavalin A can be prepared by directly dissolving the lyophilized powder in aqueous buffers. The solubility of concanavalin A in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Concanavalin A is a plant lectin that has been found in jack bean (*C. ensiformis*) and is involved in plant defense.¹ It is formed from the 290-amino acid precursor protein pro-concanavalin A via deglycosylation by N-glycanase, peptide cleavage, and re-ligation to form the mature 237-amino acid monomer, which oligomerizes to form a tetramer. Each concanavalin A monomer has a carbohydrate recognition domain, which binds to α -D-mannose, α -D-glucose, and β -D-fructose, and a metal binding site that is involved in stability.^{1,2} Concanavalin A has diverse biological activities, including erythrocyte agglutination, mitogenic stimulation, and anticancer activity.¹⁻³ It has been used in affinity purification of various glycoproteins, as well as to induce T cell activation *in vitro* and liver injury in experimental mouse models of autoimmune hepatitis.⁴⁻⁶

References

1. Suvarna, G. and Sharma, B.B. Concanavalin - A potential glycoprotein *J. Proteins Proteomics* **9(2)**, 77-90 (2018).
2. Huldani, H., Rashid, A.I., Turaev, K.N., *et al.* Concanavalin A as a promising lectin-based anti-cancer agent: The molecular mechanisms and therapeutic potential. *Cell Commun. Signal.* **20(1)**, 167 (2022).
3. Liu, B., Min, M.-W., and Bao, J.-K. Induction of apoptosis by concanavalin A and its molecular mechanisms in cancer cells. *Autophagy* **5(3)**, 432-433 (2009).
4. Wang, L., Li, F., Sun, W., *et al.* Concanavalin A-captured glycoproteins in healthy human urine. *Mol. Cell. Proteomics* **5(3)**, 560-562 (2006).
5. Dwyer, J.M. and Johnson, C. The use of concanavalin A to study the immunoregulation of human T cells. *Clin. Exp. Immunol.* **46(2)**, 237-249 (1981).
6. Wang, H.-X., Liu, M., Weng, S.-Y., *et al.* Immune mechanisms of concanavalin A model of autoimmune hepatitis. *World J. Gastroenterol.* **18(2)**, 119-125 (2012).

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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