

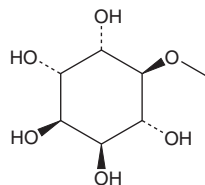
# PRODUCT INFORMATION



## D-Pinitol

Item No. 26815

**CAS Registry No.:** 10284-63-6  
**Formal Name:** 3-O-methyl-D-*chiro*-inositol  
**Synonym:** 3-O-methyl-Chiroinositol  
**MF:** C<sub>7</sub>H<sub>14</sub>O<sub>6</sub>  
**FW:** 194.2  
**Purity:** ≥95%  
**Supplied as:** A crystalline solid  
**Storage:** 4°C  
**Stability:** ≥4 years  
**Item Origin:** Plant/*Ceratonia siliqua*



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

### Laboratory Procedures

D-Pinitol is supplied as a crystalline solid. A stock solution may be made by dissolving the D-pinitol in the solvent of choice, which should be purged with an inert gas. D-Pinitol is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of D-pinitol in these solvents is approximately 10 and 5 mg/ml, respectively. D-Pinitol is also partially soluble in ethanol.

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 D-pinitol can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of D-pinitol in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

D-Pinitol is a cyclitol that has been found in several plants, including soybean and carob, and has diverse biological activities.<sup>1-4</sup> It decreases NF-κB gene expression and induces DNA fragmentation and apoptosis in MCF-7 breast cancer cells.<sup>1</sup> D-Pinitol induces endothelium- and nitric oxide-dependent vasodilation in isolated mouse mesenteric arteries.<sup>2</sup> *In vivo*, D-pinitol (10 mg/kg, i.p.) reduces systolic blood pressure in mice. D-Pinitol (50 mg/kg) enhances creatine clearance, reduces tubulointerstitial fibrosis, and increases levels of the cytosolic antioxidant enzymes superoxide dismutase I (SOD1) and NAD(P)H:quinone oxidoreductase (NQO1) in a mouse model of cyclosporin A-induced nephropathy.<sup>3</sup> It also decreases plasma glucose levels in a mouse model of diabetes induced by streptozotocin (Item No. 13104).<sup>4</sup>

### References

1. Rengarajan, T., Nandakumar, N., Rajendran, P., *et al.* D-pinitol promotes apoptosis in MCF-7 cells via induction of p53 and Bax and inhibition of Bcl-2 and NF-κB. *Asian Pac. J. Cancer Prev.* **15(4)**, 1757-1762 (2014).
2. Moreira, L.N., Silva, J.F., Silva, G.C., *et al.* Activation of eNOS by D-pinitol induces an endothelium-dependent vasodilatation in mouse mesenteric artery. *Front. Pharmacol.* **9:528** (2018).
3. Koh, E.S., Kim, S., Kim, M., *et al.* D-Pinitol alleviates cyclosporine A-induced renal tubulointerstitial fibrosis via activating Sirt1 and Nrf2 antioxidant pathways. *Int. J. Mol. Med.* **41(4)**, 1826-1834 (2018).
4. Bates, S.H., Jones, R.B., and Bailey, C.J. Insulin-like effect of pinitol. *Br. J. Pharmacol.* **130(8)**, 1944-1948 (2000).

#### 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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