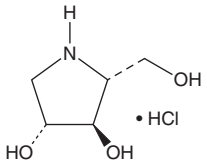
# PRODUCT INFORMATION

## 1,4-dideoxy-1,4-imino-D-Arabinitol (hydrochloride)

*Item No. 20939*

**CAS Registry No.:** 100991-92-2
**Formal Name:** 2R-(hydroxymethyl)-3R,4R-pyrrolidinediol, monohydrochloride
**Synonym:** DAB
**MF:** $C_5H_{11}NO_3 \bullet HCl$
**FW:** 169.6
**Purity:** ≥95%
**Supplied as:** A crystalline solid
**Storage:** -20°C
**Stability:** ≥4 years




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

### Laboratory Procedures

1,4-dideoxy-1,4-imino-D-Arabinitol (DAB) (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the DAB (hydrochloride) in the solvent of choice, which should be purged with an inert gas. DAB (hydrochloride) is soluble in the organic solvent DMSO at a concentration of approximately 10 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 DAB (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DAB (hydrochloride) in PBS (pH 7.2) is approximately 1 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

DAB is an inhibitor of glycogen phosphorylase, a key enzyme in glycogenolysis. It inhibits glycogenolysis in isolated liver cells ($IC_{50}$ = 1.0 µM) and in homogenates of cerebral cortex and cerebellum ($IC_{50}$s = 463 and 383 nM, respectively).[1-3] DAB is used to inhibit glycogenolysis, in liver and in brain, in various animal models.[4-6]

### References


1. Andersen, B. and Westergaard, N. The effect of glucose on the potency of two distinct glycogen phosphorylase inhibitors. *Biochem J.* **367**, 443-450 (2002).
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3. Walls, A.B., Sickmann, H.M., Brown, A., *et al.* Characterization of 1,4-dideoxy-1,4-imino-D-arabinitol (DAB) as an inhibitor of brain glycogen shunt activity. *Journal of Neurochemistry* **105**, 1462-1470 (2008).
4. Fosgerau, K., Westergaard, N., Quistorff, B., *et al.* Kinetic and functional characterization of 1,4-dideoxy-1,4-imino-D-arabinitol: A potent inhibitor of glycogen phosphorylase with anti-hyperglyceamic effect in ob/ob mice. *Arch. Biochem. Biophys.* **380(2)**, 274-284 (2000).
5. Gibbs, M.E. Role of glycogenolysis in memory and learning: Regulation by noradrenaline, serotonin and ATP. *Frontiers in Integrative Neuroscience* **9(70)** (2016).
6. Marina, N., Ang, R., Machhada, A., *et al.* Brainstem hypoxia contributes to the development of hypertension in the spontaneously hypertensive rat. *Hypertension* **65(4)**, 775-783 (2015).





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