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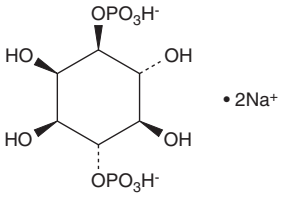
Product Information

D-*myo*-Inositol-1,4-diphosphate (sodium salt)

Item No. 10008438

Formal Name: D-*myo*-inositol-1,4-*bis*(dihydrogen phosphate), disodium salt
Synonyms: Ins(1,4)-P_2 (sodium salt), 1,4-IP_2 (sodium salt)
MF: $C_6H_{12}O_{12}P_2 \cdot 2Na$
FW: 384.1
Purity: ≥98%
Stability: ≥1 year at -20°C
Supplied as: A lyophilized powder



Laboratory Procedures

For long term storage, we suggest that D-*myo*-inositol-1,4-diphosphate (sodium salt) (Ins(1,4)P_2) be stored as supplied at -20°C. It should be stable for at least one year.

Ins(1,4)P_2 is supplied as a lyophilized powder. Ins(1,4)P_2 is sparingly soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. For biological experiments, we suggest that organic solvent-free aqueous solutions of Ins(1,4)P_2 be prepared by directly dissolving the lyophilized powder in water. The solubility of Ins(1,4)P_2 in water is at least 50 mg/ml. We do not recommend storing the aqueous solution for more than one day. Ins(1,4)P_2 will not be stable in aqueous solutions for more than 24 hours.

Ins(1,4)P_2 is a member of the InsP molecular family that play critical roles as small, soluble second messengers in the transmission of cellular signals.[1,2] The most studied InsP, Ins(1,4,5)P_3 is a second messenger produced in cells by phospholipase C (PLC)-mediated hydrolysis of phosphatidylinositol-4,5-diphosphate.[3,4] Binding of Ins(1,4,5)P_3 to its receptor on the endoplasmic reticulum results in opening of the calcium channels and an increase in intracellular calcium.[4,5] Ins(1,4)P_2 can be dephosphorylated to Ins(4)P by inositol polyphosphate 1-phosphatase and further dephosphorylated to inositol by inositol monophosphatase.[2]

References

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2. Majerus, P.W. Inositol phosphate biochemistry. *Annu. Rev. Biochem.* **61**, 225-250 (1992).
3. Streb, H., Irvine, R.F., Berridge, M.J., *et al.* Release of Ca^{2+} from a nonmitochondrial intracellular store in pancreatic acinar cells by inositol-1,4,5-trisphosphate. *Nature* **306**, 67-69 (1983).
4. Yoshida, Y. and Imai, S. Structure and function of inositol 1,4,5-triphosphate receptor. *Jpn. J. Pharmacol.* **74**, 125-137 (1997).
5. Exton, J.H. Regulation of phosphoinositide phospholipases by hormones, neurotransmitters, and other agonists linked to G proteins. *Annu. Rev. Pharmacol. Toxicol.* **36**, 481-509 (1996).

Related Products

D-*myo*-Inositol-1,4,5-triphosphate (potassium salt) - Item No. 60960 • D-*myo*-Inositol-1,3,4-triphosphate (sodium salt) - Item No. 60972 • D-*myo*-Inositol-1,3,4,5-tetraphosphate (sodium salt) - Item No. 60980 • D-*myo*-Inositol-1-phosphate (sodium salt) - Item No. 10007777 • D-*myo*-Inositol-3-phosphate (sodium salt) - Item No. 10007778 • D-*myo*-Inositol-2,4,5-triphosphate (sodium salt) - Item No. 10007779 • D-*myo*-Inositol-1,2,6-triphosphate (sodium salt) - Item No. 10007780 • D-*myo*-Inositol-1,3,5-triphosphate (sodium salt) - Item No. 10007781 • D-*myo*-Inositol-3,4,5,6-tetraphosphate (sodium salt) - Item No. 10007782 • D-*myo*-Inositol-1,4,5,6-tetraphosphate (sodium salt) - Item No. 10007783 • D-*myo*-Inositol-1,3,4,5,6-pentaphosphate (sodium salt) - Item No. 10007784 • D-*myo*-Inositol-1,4,5-triphosphate (sodium salt) - Item No. 10008205 • D-*myo*-Inositol-4,5-diphosphate (sodium salt) - Item No. 10008418 • D-*myo*-Inositol-4-phosphate (ammonium salt) - Item No. 10008437 • D-*myo*-Inositol-1,3-diphosphate (sodium salt) - Item No. 10008443

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