

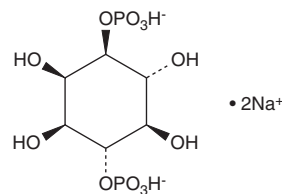
# PRODUCT INFORMATION



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

Item No. 10008438

<b>Formal Name:</b>	D- <i>myo</i> -inositol-1,4-bis(dihydrogen phosphate), disodium salt
<b>Synonyms:</b>	Ins(1,4)-P <sub>2</sub> (sodium salt), 1,4-IP <sub>2</sub> (sodium salt)
<b>MF:</b>	C <sub>6</sub> H <sub>12</sub> O <sub>12</sub> P <sub>2</sub> • 2Na
<b>FW:</b>	384.1
<b>Purity:</b>	≥98%
<b>Supplied as:</b>	A lyophilized powder
<b>Storage:</b>	-20°C
<b>Stability:</b>	≥5 years



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

### Laboratory Procedures

D-*myo*-Inositol-1,4-diphosphate (Ins(1,4)P<sub>2</sub>) (sodium salt) is supplied as a lyophilized powder. Ins(1,4)P<sub>2</sub> (sodium salt) 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<sub>2</sub> (sodium salt) be prepared by directly dissolving the lyophilized powder in water. The solubility of Ins(1,4)P<sub>2</sub> (sodium salt) 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<sub>2</sub> (sodium salt) will not be stable in aqueous solutions for more than 24 hours.

### Description

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

### References

1. Berridge, M.J. Inositol trisphosphate and calcium signalling. *Nature* **361**, 315-325 (1993).
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<sup>2+</sup> 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).

#### 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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