

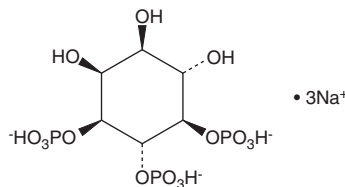
# PRODUCT INFORMATION



## D-*myo*-Inositol-3,4,5-triphosphate (sodium salt)

Item No. 10008425

**Formal Name:** D-*myo*-inositol-3,4,5-tris(hydrogen phosphate), trisodium salt  
**Synonyms:** Ins(3,4,5)-P<sub>3</sub>, 3,4,5-IP<sub>3</sub>  
**MF:** C<sub>6</sub>H<sub>12</sub>O<sub>15</sub>P<sub>3</sub> • 3Na  
**FW:** 486.0  
**Purity:** ≥98%  
**Supplied as:** A lyophilized powder  
**Storage:** -20°C  
**Stability:** ≥5 years



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

### Laboratory Procedures

D-*myo*-Inositol-3,4,5-triphosphate (Ins(3,4,5)-P<sub>3</sub>) (sodium salt) is supplied as a lyophilized powder. Ins(3,4,5)-P<sub>3</sub> (sodium salt) is sparingly soluble in organic solvents. For biological experiments, we suggest that aqueous solutions of Ins(3,4,5)-P<sub>3</sub> (sodium salt) be prepared by directly dissolving the lyophilized powder in water. The solubility of Ins(3,4,5)-P<sub>3</sub> (sodium salt) in water is approximately 50 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Ins(1,4,5)-P<sub>3</sub> is a second messenger produced in cells by phospholipase C (PLC)- mediated hydrolysis of phosphatidyl inositol-4,5-bisphosphate.<sup>1,2</sup> Binding of Ins(1,4,5)-P<sub>3</sub> to its receptor results on the endoplasmic reticulum in opening of the calcium channels and an increase in intracellular calcium.<sup>2,3</sup> Ins(3,4,5)-P<sub>3</sub> is a structural analog of Ins(1,4,5)-P<sub>3</sub> and a member of the inositol phosphate (InsP) cell signalling family of molecules.<sup>4,5</sup> Ins(3,4,5)P<sub>3</sub> is 200-fold less potent than Ins(1,4,5)-P<sub>3</sub> at initiating Ca<sup>++</sup> release when injected into *Xenopus* oocytes.<sup>6</sup> Ins(1,4,5)-P<sub>3</sub> binds to Type 1, 2, and 3 subtypes of the rat recombinant IP<sub>3</sub> receptor with K<sub>i</sub> values of less than 25 nM, whereas Ins(3,4,5)-P<sub>3</sub> exhibits significantly lower affinity with K<sub>i</sub> values of 3-11 μM.<sup>7</sup>

### References

1. 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).
2. Yoshida, Y. and Imai, S. Structure and function of inositol 1,4,5-triphosphate receptor. *Jpn. J. Pharmacol.* **74**, 125-137 (1997).
3. 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).
4. Berridge, M.J. Inositol trisphosphate and calcium signalling. *Nature* **361**, 315-325 (1993).
5. Majerus, P.W. Inositol phosphate biochemistry. *Annu. Rev. Biochem.* **61**, 225-250 (1992).
6. DeLisle, S., Radenberg, T., Wintermantel, M.R., *et al.* Second messenger specificity of the inositol trisphosphate receptor: Reappraisal based on novel inositol phosphates. *Am. J. Physiol. Cell Physiol.* **35**, C429-C436 (1994).
7. Feng, B., Yao, P.M., Li, Y., *et al.* The endoplasmic reticulum is the site of cholesterol-induced cytotoxicity in macrophages. *Nature Cell Biology* **5(9)**, 781-792 (2003).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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