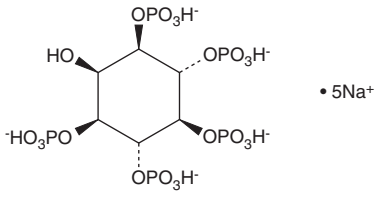
PRODUCT INFORMATION

D-*myo*-Inositol-1,3,4,5,6-pentaphosphate (sodium salt)

Item No. 10007784

Formal Name: D-*myo*-inositol-1,3,4,5,6-penta(hydrogen phosphate), pentasodium salt
Synonyms: Ins(1,3,4,5,6)P_5, 1,3,4,5,6-IP_5
MF: $C_6H_{12}O_{21}P_5 \bullet 5Na$
FW: 690.0
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-1,3,4,5,6-pentaphosphate (Ins(1,3,4,5,6)P_5) (sodium salt) is supplied as a lyophilized powder. A stock solution may be made by dissolving the Ins(1,3,4,5,6)P_5 (sodium salt) in water. The solubility of Ins(1,3,4,5,6)P_5 (sodium salt) in water is approximately 50 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The phosphatidylinositol 3-kinase (PI3K)/Akt signal transduction pathway plays critical roles in cell growth and proliferation making it an attractive target for anticancer agents.[1] Ins(1,3,4,5,6)P_5 is one of the many inositol phosphate isomers that act as small, soluble second messengers in the transmission of cellular signals.[2-4] It can be interconverted with Ins(3,4,5,6)P_4 by a 1-kinase/1-phosphatase cycle, as well as with Ins(1,4,5,6)P_4 in a 3-kinase/3-phosphatase cycle.[4] Ins(1,3,4,5,6)P_5 inhibits the phosphorylation and kinase activity of Akt/PKB, inducing apoptosis in ovarian, lung, and breast cancer cells.[5] It exhibits antiangiogenic activity *in vitro*, blocking capillary tube formation of HUVEC, as well as antitumor effects against cancer xenografts in nude mice.[6] Ins(1,3,4,5,6)P_5 binds to the PH domain of Grp1 with a K_d value of 590 nM.[7]

References

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3. Berridge, M.J. Inositol trisphosphate and calcium signalling. *Nature* **361(6410)**, 315-325 (1993).
4. Shears, S.B. The versatility of inositol phosphates as cellular signals. *Biochim. Biophys. Acta.* **1436(1-2)**, 49-67 (1998).
5. Piccolo, E., Vignati, S., Maffucci, T., *et al.* Inositol pentakisphosphate promotes apoptosis through the PI 3-K/Akt pathway. *Oncogene* **23(9)**, 1754-1765 (2004).
6. Maffucci, T., Piccolo, E., Cumashi, A., *et al.* Inhibition of the phosphatidylinositol 3-kinase/Akt pathway by inositol pentakisphosphate results in antiangiogenic and antitumor effects. *Cancer Res.* **65(18)**, 8339-8349 (2005).
7. Kavran, J.M., Klein, D.E., Lee, A., *et al.* Specificity and promiscuity in phosphoinositide binding by pleckstrin homology domains. *J. Biol. Chem.* **273(46)**, 30497-30508 (1998).

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