3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone 800-325-5832 • (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Protein Phosphatase 2A Inhibitor Protein, 2-α human, recombinant
expressed in *E. coli*

Product Number **P 2243**
Storage Temperature –70 °C

Synonyms: $I_2\alpha^{PP2A}$; I_2^{PP2A}

Product Description

Human Protein Phosphatase 2A Inhibitor Protein, 2-α (I_2^{PP2A}) is a recombinant, human protein expressed in *E. coli.* It is a potent, heat-stable PP2A inhibitor with a molecular mass of approximately 39 kDa.

This protein inhibits all forms of PP2A with a k_i of approximately 0.1 nM with myelin basic protein, histone H1, and other substrates, but not with casein. PP2A is inhibited by this protein in a manner noncompetitive with the substrate and it is considered specific for PP2A. I_2^{PP2A} has been determined to be the equivalent of the acute undifferentiated leukemia-associated SET protein (also termed PHAP-II and TAF-1β).[1] Additionally, I_2^{PP2A} has been shown to act as an activator of c-Jun and AP-1 directed gene expression.[1] I_2^{PP2A} is primarily located in the nucleus of most mammalian cell types.

PP2A is a major mammalian protein serine/threonine phosphatase involved in the regulation of diverse cellular processes. This regulation is effected through control of signaling pathways by a mechanism of phosphorylation/dephosphorylation with a variety of protein kinases. Importantly, PP2A is believed to play a role in the regulation of NF-$_\kappa$B signaling, which has been shown to promote cell survival and escape from apoptosis.[2]

This product is supplied as a solution of 50 mM Tris-HCl, pH 7.0, containing 14 mM 2-mercaptoethanol, 1 mM benzamidine, 0.1 mM PMSF, 1 mM EDTA, 0.1% BRIJ® 35, and 10% glycerol.

Purity: minimum 90% (SDS-PAGE)

Precautions and Disclaimer

This product is for laboratory use only. Please consult the Material Data Safety Sheet for information regarding hazards and safe handling practices.

Storage/Stability

The product ships on dry ice and it is recommended to store the product at –70 °C. After thawing, store stock solutions as aliquots at –70 °C. Avoid repeated freeze-thaw cycles.

References

1. Al-Murrani, S.W.K., et al., Expression of I_2^{PP2A}, an inhibitor of protein phosphatase 2A, induces c-Jun and AP-1 activity. Biochem. J., **341**, 293-298 (1999).
2. Li, M., et al., Purification and characterization of two potent heat-stable protein inhibitors of protein phosphatase 2A from bovine kidney. Biochemistry, **34**, 1988-1996 (1995).
3. Yang, J., et al., Protein phosphatase 2A interacts with and directly dephosphorylates RelA. J. Biol. Chem., **276**, 47828-47833 (2001).
4. Khang, H.S., and Choi, I., Protein phosphatase 2A modulated the proliferation of human multiple myeloma cells via regulation for the production of reactive oxygen intermediates and anti-apoptotic factors. Cell Immuno., **213**, 34-44 (2001).
5. Klumpp, S., and Krieglstein, J., Serine/threonine protein phosphatases in apoptosis. Curr. Opin. Pharmalcol., **2**, 458-462 (2002).

JBB/MAM 8/02