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ProductInformation

Protein Phosphatase $2A_1$
from bovine kidney

Product Number **P 6993**
Storage Temperature -70 °C

Synonyms: $PP2A_1$

Product Description
Protein Phosphatase $2A_1$ is a divalent cation-dependent protein serine/threonine phosphatase implicated as a growth suppressor and is associated with dis-regulation in cancer. This enzyme is a trimer consisting of the A, B, and C subunits of the PP2A family. The individual subunits display molecular weights of 65 kDa, 55 kDa, and 36 kDa, respectively, making a total calculated molecular weight of 192 kDa.

This enzyme is involved in regulating numerous cellular processes including cell cycle, growth, and differentiation. Protein Phosphatase 2A is a cytoplasmic protein, which has been shown to colocalize with mictotubule proteins and is involved in the dephosphorylation of the tau protein and oncoprotein 18. Further studies suggest the Protein Phosphatase $2A_1$ binds to polymerized microtubule proteins and may be targeted by tubulin in modulating phosphatase activity.

The 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, and 50% glycerol.

Specific Activity: minimum 1,500 units per mg protein

Unit Definition: One unit will release 1 nanomole of inorganic phosphate from ^{32}P-labeled phosphorylase a protein (MBP) per minute at 30 °C at pH 7.0.

Purity: minimum 90% (SDS-PAGE)

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

Storage/Stability
The product ships in dry ice and storage at –70 °C is recommended. Avoid freeze-thaw cycles. Store working aliquots at –70 °C. The product is stable for 24 to 48 hours at 2-8 °C.

References
1. Amick, G.D, et al., Protein Phosphatase 2A is a specific protamine-kinase-inactivating phosphatase. Biochem. J., **287(Pt. 3)**, 1019-1022 (1992).
2. Guo, H., and Damuni, Z., Autophosphorylation-Activated Protein Kinase Phosphorylates and Inactivates Protein Phosphatase 2A. Proc. Natl. Acad. Sci. USA, **90(6)**, 2500-2504 (1993).
3. Hiraga, A., and Tamura, S., Protein phosphatase 2A is associated in an inactive state with microtubules through 2A1-specific interaction with tubulin. Biochem. J., **346**, 433-439 (2000).
4. Matthews, H.R., and MacKintosh, C., Protein histidine phosphatase activity in rat liver and spinach leaves. FEBS Letters, **364**, 51-54 (1995).
5. Lechward, K., et al., Protein phosphatase 2A: variety of forms and diversity of functions. Acta Biochim. Pol., **48(4)**, 921-933 (2001).

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