ProductInformation

Protein Phosphatase 2A
Purified from human erythrocytes

Product Number **P 9989**
Storage Temperature –20 °C

EC: 3.1.3.16

Product Description
Protein phosphatase 2A (PP2A) is an intracellular serine/threonine protein phosphatase responsible for regulation of a variety of cellular processes.[1] PP2A is reported to contribute to metabolism, meiosis, mitosis, and apoptosis.[2,3] It is the most abundant serine/threonine-specific phosphatase in mammals.[1]

This product, isolated from human red blood cells, is a hetrodimer consisting of a regulatory subunit, A, and a catalytic subunit, C, which make up the core enzyme. This enzyme will reconstitute to the ABC trimer with the addition of a regulatory B subunit. The A and C subunits each have an α and β isoform. Subunit B has multiple isoforms. Subunit A is a 588 amino acid protein with an average molecular weight of 65.1 kDa.[8] Subunit C consists of 309 amino acids with an average molecular weight of 35.6 kDa.[9]

PP2A is involved in the regulation of several kinases and is known to dephosphorylate SV40 large T antigen and P53.[5] It specifically dephosphorylates phosphoserine and phosphothreonine residues. PP2A is not specific for the dephosphorylation of phosphotyrosines. Activity of the enzyme is enhanced in the presence of Mn^{2+} and to a lesser extent by Mg^{2+}.[6] To maintain enzyme activity, sulfhydryl compounds must be present.[7]

PP2A is inhibited by phosphate, phosphoesters, fluoride, and low levels of okadaic acid (<10 nM).[7] It is resistant to protein phosphatase inhibitor-2 (I-2).[7] Extremely low levels of serine kinase activity may be exhibited by PP2A. This activity is inhibited by EDTA.

PP2A is supplied as a solution in 20 mM MOPS, pH 7.5, 50% glycerol, 150 mM NaCl, 1 mM $MgCl_2$, 60 mM 2-mercaptoethanol, 2 mM EGTA, 0.1 mM $MnCl_2$, and 0.1 mg/mL serum albumin.

Unit definition: One unit will release 1 nanomole phosphate per minute from ^{32}P-labeled phosphorylase A at 30 °C, pH 7.5.

Preparation Instructions
Prepare dilutions in 20 mM MOPS, pH 7.5, 150 mM NaCl, 60 mM 2-mercaptoethanol, 1 mM MgCl2, 2 mM EGTA, 0.1 mM $MnCl_2$, 10% glycerol, and 0.1 mg/ml BSA.

Storage/Stability
Store product at –20 °C. Do not store at –70 °C. It is stable for 1 year if stored as recommended.

Store stock solutions in frozen aliquots at –20 °C.

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.

References

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