

Product Information

Protein Phosphatase 2C from bovine brain

Catalog Number **P1743**

Storage Temperature -70°C

Synonym: PP2C

Product Description

Protein Phosphatase 2C is a Mg^{2+} -dependent serine/threonine protein phosphatase with a molecular mass of 42–45 kDa, involved in regulating numerous cellular processes. It is ubiquitously expressed and has been isolated from many mammalian tissues including liver, brain, skeletal muscle, retina, and blood platelets. There are two major isotypes associated with this enzyme, 2C₁ and 2C₂, also known as 2C α and 2C β , respectively. Both isozymes appear to be equally Mg^{2+} -dependent and respond similarly to specific substrates. Both are monomers that demonstrate ~75% sequence homology. The molecular masses are similar; 44 kDa and 42 kDa for 2C₁ and 2C₂, respectively. Additional Type 2C serine/threonine protein phosphatases include 2C γ , 2C δ , Wip1, and NERPP2C, many of which have multiple isozyme members.

Protein phosphatase 2C dephosphorylates a number of substrates such as casein, phosphorylase kinase, myosin P light chain, glycogen synthase, and glycogen phosphorylase. There is also evidence to suggest that in the presence of unsaturated fatty acids (arachidonic acid) the cationic-dependant nature of the enzyme changes significantly. In analytical studies of PP2C, the Mg^{2+} concentration required is much higher than physiologic concentrations; whereas, in the presence of arachidonic acid, reactions are driven at physiologic Mg^{2+} concentrations.

The product is supplied as a solution in 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: ~1,000 units per mg protein
(~1 unit per vial)

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

Purity: $\geq 70\%$ (SDS-PAGE)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. 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. The product remains active for 24–48 hours at $2-8^{\circ}\text{C}$. Store working aliquots at -70°C .

References

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7. Kusuda, K., et al., Mutational analysis of the domain structure of mouse protein phosphatase 2C β . *Biochem. J.*, **332**, 243-250 (1998).

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