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Product Information

Protein Phosphatase-1 Catalytic Subunit, α-Isoform rabbit, recombinant expressed in *E. coli*

Catalog Number **P7937**
Storage Temperature –20 °C

CAS RN 9025-75-6
EC 3.1.3.16
Synonym: PP1α

Product Description

Protein Phosphatase-1 (PP1), catalytic subunit is the rabbit, recombinant α isoform expressed in *E. coli.* PP1, a serine/threonine phosphatase, is a heterodimer comprised of a catalytic subunit, which is associated with either a targeting subunit or a regulatory subunit, phosphatase inhibitor-2 (I-2). PP1 is involved in glycogen metabolism and in muscle contractility regulation. In addition, it is implicated in cell cycle and in transcription regulation.[1-3]

The bacterially expressed, rabbit PP1 catalytic subunit, α isoform (PP1α) is a 37.5 kDa protein that requires Mn^{2+} for activity. In other aspects, it has properties similar to the native rabbit muscle protein, such as its specific activity towards phosphorylase a and its inhibition by okadaic acid, microcystin LR, and phosphatase inhibitor-2 (I-2).[4]

The product is supplied as lyophilized powder containing imidazole buffer, pH 7.4, NaCl, DTT, EDTA, $MnCl_2$, TWEEN® 20, and trehalose as a stabilizer.

Purity: >80 % (SDS-PAGE)

Specific activity: 5,000–15,000 units/mg protein

Unit definition: One unit will hydrolyze 1 nmole of *p*-Nitrophenyl phosphate per minute at pH 7.4 at 30 °C.

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.

Preparation Instructions

Reconstitution with 100 µl of 20% (v/v) glycerol solution results in a solution of 250 mM NaCl, 50 mM imidazole, pH 7.4, 2 mM DTT, 1 mM EDTA, 2 mM $MnCl_2$, 0.025 % TWEEN 20, 100 mg/ml trehalose and 20% (v/v) glycerol. The protein concentration may be determined from information on the lot-specific CofA.

Storage/Stability

Store the product at –20 °C.

After reconstitution, store aliquots at –70 °C for long term storage or at –20 °C for up to three days. Repeated freezing and thawing is not recommended. Storage in “frost-free” freezers is not recommended.

References

1. Faux, M.C., and Scott, J.D., More on target with protein phosphorylation: conferring specificity by location. *Trend. Biochem. Sci.*, **21**, 312-315 (1996).
2. Cohen, P., The structure and regulation of protein phosphatases. *Annu. Rev. Biochem.*, **58**, 453-508 (1989).
3. Hunter, T., Protein kinases and phosphatases: the yin and yang of protein phosphorylation and signaling. *Cell*, **80**, 225-236 (1995).
4. Zhang, A.J. et al., Expression of the catalytic subunit of phosphorylase phosphatase (protein phosphatase-1) in Escherichia coli. *J. Biol. Chem.*, **267**, 1484-1490 (1992).