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Product Information

MONOCLONAL ANTI-PHOSPHOSERINE - AGAROSE CLONE PSR-45 Purified Mouse Immunoglobulin

Product No. **A 8076**

Store at 2-8 °C

Product Description

Monoclonal Anti-Phosphoserine (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Phosphoserine conjugated to KLH was used as the immunogen. The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2). The antibody is then purified by High Performance Affinity Chromatography (Protein A column). After purification the antibody preparation is immobilized on cyanogen-bromide activated agarose at 2 mg antibody per ml resin volume.

Monoclonal Anti-Phosphoserine reacts with phosphorylated serine both as free amino acid or when conjugated to carriers such as BSA or KLH using ELISA and dot blot. It does not react with non-phosphorylated serine, phosphorylated tyrosine or threonine, AMP or ATP. The antibody has been used for the localization of some phosphoserine containing proteins using the immunoblotting method. Certain proteins known to contain phosphorylated serine may not be recognized by this antibody due to steric hindrance of the recognition site.

Protein phosphorylation and dephosphorylation are basic mechanisms for the modification of protein function in eukaryotic cells.¹ Phosphorylation is a rare post-translational event in normal tissue, however, the abundance of phosphorylated cellular proteins increases several fold following various activation processes which are mediated through phosphotyrosine, phosphoserine or phosphothreonine (p-tyr/p-ser/p-thr). Many signal transduction pathways, such as the EGF, PDGF and insulin receptor systems, contain tyr/ser/thr kinase which phosphorylate specific tyr/ser/thr residues upon

binding of ligands to their receptors.² T cell antigen receptor complex or the receptors for some hemopoietic growth factors may stimulate these phosphorylation associated kinases,³ and cells transformed by viral oncogenes contain elevated levels of phosphorylated tyr/ser/thr. An understanding of transformation by oncogenes and mitogenic processes of growth factors depends on the identification of their substrate and a subsequent determination of how phosphorylation affects their properties. Studies on the role of phosphorylated proteins have been hampered by their low abundance and the problem of distinguishing the various types of phosphorylated proteins. The most common procedure is to label intact cells or small tissue fragments with ³²P and subsequently to isolate ³²P-labeled proteins by conventional biochemical methods. In order to identify the specific amino acids that undergo phosphorylation, additional long and tedious procedures for phosphoamino acid analysis are required. Immunoblotting of cellular proteins with antibodies directed against phosphoamino acids is advantageous as it does not involve ³²P labeling, and can therefore be employed to monitor alterations in phosphorylation of specific proteins as they occur in intact organs or the whole animal. Indeed, mono- and polyclonal antibodies directed against phosphorylated residues have been generated and found useful as analytical and preparative tools^{2,4} because they enable the rapid identification, quantification and immunoaffinity isolation of phosphorylated cellular proteins.

Monoclonal Anti-Phosphoserine - Agarose may be used for the immunoprecipitation or immuno-affinity purification of serine phosphoproteins.

Reagents

The product is provided as a 1:1 suspension in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Product Profile

Each milliliter of settled resin will bind at least 1.1 mg of phosphoserine-BSA conjugate.

For microscale immunoprecipitation or immunopurification of serine phosphoproteins from cell lysates, determine the optimal amount of the immunoadsorbent by titration assay. For certain purposes, a volume as small as 5 μ l may be sufficient.

Storage

Store at 2-8 °C. **Do Not Freeze.**

References

1. Hunter, T., and Cooper, J., *Ann. Rev. Biochem.*, **54**, 897 (1985).
2. Heffetz, D., et al., *Meth. Enzymol.*, **201**, 44 (1991).
3. Alexander, D., and Cantrell, D., *Immunol. Today*, **10**, 200 (1989).
4. Levine, L., et al., *J. Immunol. Meth.*, **124**, 239 (1989).

PCS/KMR 02/02