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ProductInformation

Myelin Basic Protein Kinase – 1
from bovine kidney

Product Number **M 1816**
Storage Temperature -70 °C

Synonym: MBPK-1

Product Description
Myelin basic protein kinase – 1 (MBPK-1) is a distinct member of the mitogen-activated protein kinase (MAPK) family. With an apparent molecular weight of approximately 40 kDa, the MBPK enzyme has been implicated as an up-stream component of the MAPK cascade that phosphorylates and activates the cytosolic protamine protein kinase, cPK. MBPK-1 is a unique member of the family due to fact that it is not inactivated in the presence of protein phosphatase 2A2 or protein tyrosine phosphatases. Unlike MBPK-2, (Product No. M 1941), the enzymatic activity of MBPK-1 is not affected by the degree of autophosphorylation on its threonine residues.

The MAPK family of kinases is activated as a rapid intracellular regulatory response mechanism for numerous cellular processes including cell growth and differentiation. Known to respond to a variety of extracellular signals including insulin, epidermal growth factor, platelet-derived growth factor, fetal growth factor, nerve growth factor, interleukin-1, and phorbol esters, MAPK is activated via phosphorylation on the tyrosine and either or both threonine and serine residues.[1]

The product is supplied as a solution in 50 mM Tris-HCl, pH 7.0, containing 1 mM benzamidine, 0.1 mM PMSF, 14 mM 2-mercaptoethanol, 1 mM EDTA, and 50% glycerol.

Activity: approximately 300 units/mg protein (Bradford)

Unit Definition: One unit is defined as the amount of enzyme that incorporates 1 nmole of phosphoryl groups into myelin basic protein (MBP) per minute at pH 7.0 at 30 °C.

Purity: minimum 90% (SDS-PAGE)

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

Storage/Stability
The product ships on dry ice and it is recommended to store the product at –70 °C. Avoid repeated freeze-thaw cycles.

References
1. Reddy, S.A., et al., Phosphorylation and activation of protamine kinase by two forms of a myelin basic protein kinase from extracts of bovine kidney cortex. J. Biol. Chem., **268(20)**, 15298-15304 (1993).
2. Guo, H., et al., Purification and characterization of an autophosphorylation-activated protein serine threonine kinase that phosphorylates and inactivates protein phosphatase 2A. J. Biol. Chem., **268(15)**, 11193-11198 (1993).
3. Ueki, H., et al., Orthovanadate stimulates cyclic guanosine monophosphate-inhibited cyclic adenosine monophosphate phosphodiesterase activity in isolated rat fat pads through activation of particulate myelin basic protein kinase by protein tyrosine kinase. Endocrinology, **138(7)**, 2784-2789 (1997).

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