3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Auto-Activated Protein Kinase from bovine kidney

Product Number **A 8850**
Storage Temperature –70 °C

Synonyms: AK

Product Description

Auto-Activated Protein Kinase (AK) is an autophosphorylation dependent protein serine/threonine kinase originally isolated from porcine brain and liver. It is a cyclic nucleotide and Ca^{2+} ion independent kinase with a molecular weight of approximately 36 kDa. AK is the catalytic subunit of p21-activated protein kinase 2 (PAK2 or γ-PAK) that undergoes rapid phosphorylation and activation. According to the PAK2 sequence, AK is the C-terminal catalytic fragment that lacks the N-terminal regulatory region. AK autophosphorylates primarily at the single threonine residue Thr^{402}. This enzyme phosphorylates and inactivates protein phosphatase 2A and is involved in several signal transduction pathways including cytoskeleton organization and apoptosis. It may be related to the catalytic domain of p21-activated $p65^{PAK}$ protein kinase.

The product is supplied as a solution of 50 mM Tris-HCl, pH 7.0, containing 14 mM 2-mercaptoethanol, 1 mM benzamidine, 0.1 mM PMSF, 1 mM EDTA, 65% ethylene glycol, and 0.1% BRIJ® 35.

Purity: minimum 90% (SDS-PAGE)

Specific Activity: approximately 17,000 units per mg protein (approximately 0.8 unit per vial).

Unit Definition: One unit is the amount of enzyme that will incorporate 1 nmole of phosphoryl groups using myelin basic protein as a substrate per minute at pH 7 at 30 °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.

Storage/Stability

The product ships on dry ice and storage at –70 °C is recommended. Avoid freeze-thaw cycles. Store working aliquots at –70 °C. This product is stable for 24 to 48 hours at 2-8 °C.

References

1. Yu, J.S., et al., Identification of the regulatory autophosphorylation-dependant protein kinase (auto-kinase), Evidence that auto-kinase belongs to a member of the p21-activated kinase family. Biochem. J., **334**, 121-131 (1998).
2. Guo, H., and Damuni, Z., Autophosphorylation-activated protein kinase phosphorylates and inactivates protein phosphatase 2A. Proc. Natl. Acad. Sci. USA, **90**, 2500-2504 (1993).
3. Chan, W.H., et al., PAK2 is cleaved and activated during hyperosmotic shock-induced apoptosis via a caspase-dependent mechanism: evidence for the involvement of oxidative stress. J. Cell Physiol., **178(3)**, 397-408 (1999).

LCM/MAM 8/02