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ProductInformation

MONOCLONAL ANTI-GLYCOGEN SYNTHASE KINASE-3 (GSK-3), CLONE GSK-3B
Mouse Ascites Fluid

Product Number **G 4414**

Product Description

Monoclonal Anti-Glycogen Synthase Kinase-3 (GSK-3) (mouse IgG1 isotype) is derived from the GSK-3B hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant rabbit GSK-3β. 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).

Monoclonal Anti-Glycogen Synthase Kinase-3 (GSK-3) recognizes both GSK-3 types α and β (GSK-3α and GSK-3β, 51 and 47kD, respectively), applying immunoblotting. The product is also useful in ELISA and immunocytochemistry. Cross- reactivity has been observed with human, rabbit, rat and mouse GSK-3.

Glycogen synthase kinase-3 (GSK-3), a serine/ threonine protein kinase, specifically phosphorylates glycogen synthase, a critical enzyme regulating glucose storage.[1] GSK-3 has also been implicated in regulating metabolic enzymes such as ATP-citrate lyase.[2] It is also involved in phosphorylation of the regulatory subunits of the cytosolic and glycogen-associated forms of the type I protein Ser/Thr phosphatase, the regulatory subunit of cyclic AMP-dependent protein kinase, microtubule- associated tau proteins,[3] and the largest subunit of eIF-2B the factor involved in guanine nucleotide exchange on the protein synthesis initiation factor eIF-2. The *c-jun*, *c-myb, c-myc*, CREB and CREM transcription factors have also been found to be substrates for GSK-3.[4] The molecular cloning of GSK-3 revealed the existence of two closely related polypeptides termed GSK-3α and GSK-3β. These enzymes are both highly homologous to a Drosophila melanogaster (fruitfly) homoeotic gene termed *zeste-white3*^{sgg} that is required during embryogenesis.[5] A multifunctional protein kinase termed ATP - citrate lyase kinase (ACLK), exhibits several similarities to the α- and β-forms of GSK-3. Both the α- and β-forms of GSK-3 phosphorylate ATP-citrate lyase at the same site(s) targeted by ACLK. The α-isoform (also termed protein kinase F_A/GSK-3α) is a 51 kD protein, which is 95% identical in the kinase domain to the 47 kD β-isoform (identical to tau protein kinase I, tentatively termed TPKI/GSK-3β/F_A). Antibodies reacting specifically with GSK-3 are useful tools in the study of the intracellular pathways involved with the expression and function of GSK-3.

Reagents

The product is provided as ascites fluid with 15 mM sodium azide as a preservative.

Precautions and Disclaimer

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

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

A minimum working dilution of 1:500 is determined by immunoblotting, using mouse brain cytosolic preparation.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

1. Cohen, P., in: "The Enzymes", Vol. **17**, Boyer, P.D., and Kreb, E.G., (eds.), , Academic Press, San Diego, pp. 461-497 (1986).
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3. Song, J.-S., and Yang, S.-D., J. Prot. Chem., **14**, 95 (1995).
4. Plyte, S.E., et al., Biochim. Biophys. Acta, **1114**, 147 (1992).
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