Recombinant Human GSK3B Protein (His Tag)

Catalog Number:PKSH030425

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Note: Centrifuge before opening to ensure complete recovery of vial contents.

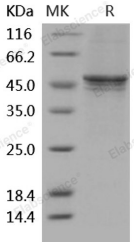
Description

Synonyms	GSK3B
Species	Human
Expression Host	Baculovirus-Insect Cells
Sequence	Met 1-Thr 433
Accession	NP_002084.2
Calculated Molecular Weight	50.4 kDa
Observed molecular weight	44-48 kDa
Tag	N-His
Bioactivity	1. The specific activity was determined to be 45 nmol/min/mg using synthetic Phospho-Glycogen Synthase Peptide-2 (YRRAAVPPSPSLSRHSSPHQpSEDEEE) as substrate. 2. Immobilized His-GSK3B at 10 μg/ml (100 μl/well) can bind biotinylated human HG3C-CTNNB1, EC50 of biotinylated human HG3C-CTNNB1 is 0.15-0.35 μg/ml.

Properties

Purity	> 90 % as determined by reducing SDS-PAGE.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.
Shipping	This product is provided as liquid. It is shipped at frozen temperature with blue ice/gel packs. Upon receipt, store it immediately at < - 20°C.
Formulation	Supplied as sterile solution of 20mM Tris, 500mM NaCl, pH 7.4, 25% glycerol, 0.5mM PMSF, 0.5mM EDTA
Reconstitution	Not Applicable

Data



> 90 % as determined by reducing SDS-PAGE.

Background

GSK3B is a serine-threonine kinase, belonging to the glycogen synthase kinase subfamily. It Contains 1 protein kinase domain, and is expressed in testis, thymus, prostate and ovary and weakly expressed in lung, brain and kidney. GSK3B is involved in energy metabolism, neuronal cell development, and body pattern formation. Polymorphisms in GSK3B gene have been implicated in modifying risk of Parkinson disease, and studies in mice show that overexpression of this gene may be relevant to the pathogenesis of Alzheimer disease. GSK3B participates in the Wnt signaling pathway. It is implicated in the hormonal control of several regulatory proteins including glycogen synthase, MYB and the transcription

factor JUN. Phosphorylates JUN at sites proximal to its DNA-binding domain, thereby reducing its affinity for DNA. Phosphorylates MUC1 in breast cancer cells, and decreases the interaction of MUC1 with CTNNB1/beta-catenin. GSK3B also plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. It prevents the phosphorylation of APC and CLASP2, allowing its association with the cell membrane. In turn, membrane-bound APC allows the localization of MACF1 to the cell membrane, which is required for microtubule capture and stabilization. GSK3B phosphorylates MACF1 and this phosphorylation inhibits the binding of MACF1 to microtubules which is critical for its role in bulge stem cell migration and skin wound repair. It may be required for early embryo development and neuron differentiation.

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