

# Recombinant Human Glycogen Synthase Kinase 3 Beta, His-tagged

**Cat. No.** GSK3B-2649H    **Lot. No.** (See product label)

## SPECIFICATION

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b>                | Recombinant human GSK-3 $\beta$ was fused at the N-terminus to a His•Tag sequence and expressed in E. coli. MW = 53-56 kDa.                                                                                                                                                                                                                                                                                                                                                                |
| <b>Species</b>                         | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Source</b>                          | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Description</b>                     | Glycogen synthase kinase-3 (GSK-3) is a serine/threonine kinase that was first characterized by its role in intermediary metabolism. GSK-3 $\beta$ is a dual-specificity kinase that is important role in insulin- and Wnt-mediated cellular signaling events. In Alzheimer"s disease GSK-3 $\beta$ is reported to affect microtubule stability via the phosphorylation of microtubule associated protein, Tau. Other known substrates include glycogen synthase, p90rsk, c-Jun, and CREB. |
| <b>Purity</b>                          | ≥90% by SDS-PAGE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Form</b>                            | Solid. Lyophilized from 0.1 M NH <sub>4</sub> CO <sub>3</sub> .                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Specific Activity</b>               | 1 $\mu$ g GSK-3 $\beta$ maximally phosphorylates 100 ng Tau protein in 30 min in an in vitro kinase assay at 30°C, pH 7.5.                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Recommended Reaction Conditions</b> | 25 mM Tris-HCl, pH 7.5, 5 mM $\beta$ -glycerophosphate, 12 mM MgCl <sub>2</sub> , 2 mM DTT, 100 $\mu$ M Na <sub>3</sub> VO <sub>4</sub> , 200 $\mu$ M ATP, 30°C.                                                                                                                                                                                                                                                                                                                           |

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|-------------------|-----------------------------------------------------------------------------------|
| <b>Solubility</b> | Reconstitute in sterile PBS to a final concentration of 1 mg/ml.                  |
| <b>Toxicity</b>   | Standard Handling (MSDS available upon request).                                  |
| <b>Storage</b>    | ≤ -70°C. Avoid freeze/thaw. Following reconstitution, aliquot and freeze (-70°C). |

## GENE INFORMATION

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>           | GSK3B glycogen synthase kinase 3 beta [ Homo sapiens ]                                                                                                                                                                                                                                                                                                                                                               |
| <b>Synonyms</b>            | GSK3B; glycogen synthase kinase 3 beta; Glycogen synthase kinase-3 beta; GSK-3 beta; EC 2.7.11.26; glycogen synthase kinase -3 beta; GSK3beta isoform                                                                                                                                                                                                                                                                |
| <b>Gene ID</b>             | 2932                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>mRNA Refseq</b>         | NM_001146156                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Protein Refseq</b>      | NP_001139628                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>MIM</b>                 | 605004                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>UniProt ID</b>          | P49841                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Chromosome Location</b> | 3q13.3                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Pathway</b>             | Chemokine signaling pathway; Alzheimer"s disease; Axon guidance; B cell receptor signaling pathway; Basal cell carcinoma; Cell cycle; Colorectal cancer; Endometrial cancer; ErbB signaling pathway; Focal adhesion; Hedgehog signaling pathway; Insulin signaling pathway; Melanogenesis; Neurotrophin signaling pathway; Prostate cancer; T cell receptor signaling pathway; Wnt signaling pathway; Axon guidance; |

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Signaling by Wnt; Signalling by NGF

**Function**

ATP binding; nucleotide binding; transferase activity; glycogen synthase kinase 3 activity; protein kinase A catalytic subunit binding; tau-protein kinase activity; NF-kappaB binding; beta-catenin binding; p53 binding

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