

GSK-3 beta Protein, Human (P. pastoris, His)

Cat. No.:	HY-P700591
Synonyms:	Serine/threonine-protein kinase GSK3B
Species:	Human
Source:	P. pastoris
Accession:	P49841 (M1-T420)
Gene ID:	2932
Molecular Weight:	48.7 kDa

PROPERTIES

AA Sequence	<pre> MSGRRPTTSF AESCKPVQQP SAFGSMKVS R DKDGSKVTTV VATPGQGPD R PQEVS YTDTK VIGNGSFGVV YQAKLCDSGE LVAIKKVLQD KRFKNRELQ I MRKLDHCNIV RLRYFFYSSG EKKDEVYLN L VLDYVPETVY RVARHYSRAK QTLPVIYVKL YMYQLFRSLA YIHSFGICHR DIKPQNLLLD PDTAVLKLCD FGSAKQLVRG EPNVSYICSR YYRAPELIFG ATDYTSSIDV WSAGCVLAEL LLGQPIFPGD SGVDQLVEII KVLGTPTREQ IREMNPNYTE FKFPQIKAHP WTKVFRP RTP PEAIALCSRL LEYTP TARLT PLEACAHSFF DELRDPNVKL PNGRDTPALF NFTTQELSSN PPLATILIPP HARIQAAAST PTNATAASDA NTGDRGQTNN AASASASNST </pre>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

GSK-3 beta, a constitutively active protein kinase, plays a multifaceted role in regulating diverse cellular processes. It serves as a negative regulator in hormonal control of glucose homeostasis, Wnt signaling, and transcription factors, exerting its effects by phosphorylating and inactivating key substrates such as glycogen synthase, EIF2B, CTNNB1/beta-catenin, APC, AXIN1, DPYSL2/CRMP2, JUN, NFATC1/NFATC, MAPT/TAU, and MACF1. In skeletal muscle, it contributes to insulin regulation of glycogen synthesis. GSK-3 beta's involvement in Wnt signaling leads to CTNNB1 degradation, while its phosphorylation of JUN and NFATC1/NFATC modulates their activity. The kinase also plays crucial roles in microtubule dynamics, influencing MAPT/TAU stability and contributing to ERBB2-dependent microtubule stabilization. Additionally, GSK-3 beta participates in diverse pathways such as NF-kappa-B regulation, pancreatic beta-cell replication, and apoptosis control through interactions with MCL1 and SNAI1. Furthermore, it orchestrates circadian rhythms, autophagy, and extrinsic apoptotic signaling, highlighting its central role in cellular homeostasis and response to external stimuli.

Caution: Product has not been fully validated for medical applications. For research use only.

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