# ARG56920
# anti-GSK3 beta antibody [1F7]

Package: 50 µl
Store at: -20°C

## Summary

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|---|---|
| Product Description | Mouse Monoclonal antibody [1F7] recognizes GSK3 beta |
| Tested Reactivity | Hu |
| Tested Application | FACS, ICC/IF, WB |
| Host | Mouse |
| Clonality | Monoclonal |
| Clone | 1F7 |
| Isotype | IgG1, kappa |
| Target Name | GSK3 beta |
| Species | Human |
| Immunogen | Recombinant fragment around aa. 341-420 of Human GSK3 Beta. |
| Conjugation | Un-conjugated |
| Alternate Names | EC 2.7.11.26; EC 2.7.11.1; GSK-3 beta; Glycogen synthase kinase-3 beta; Serine/threonine-protein kinase GSK3B |

## Application Instructions

Application table

| Application | Dilution |
|---|---|
| FACS | Assay-dependent |
| ICC/IF | Assay-dependent |
| WB | 1:1000 - 1:3000 |

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

## Properties

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| Form | Liquid |
| Purification | Purification with Protein G. |
| Buffer | PBS (pH 7.4), 0.02% Sodium azide and 10% Glycerol. |
| Preservative | 0.02% Sodium azide |
| Stabilizer | 10% Glycerol |
| Concentration | 1 mg/ml |
| Storage instruction | For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use. |

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| Note | For laboratory research only, not for drug, diagnostic or other use. |

## Bioinformation

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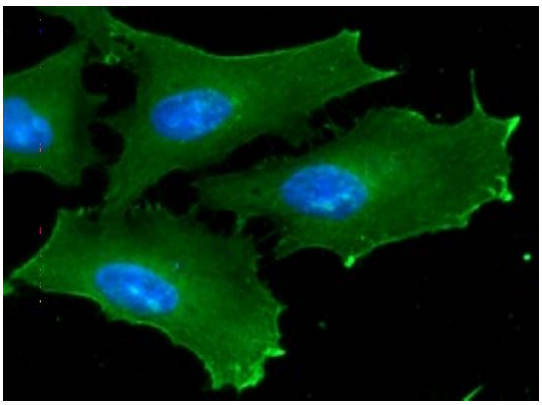
| Database links | GeneID: 2932 Human<br><br>Swiss-port # P49841 Human |
| Gene Symbol | GSK3B |
| Gene Full Name | glycogen synthase kinase 3 beta |
| Background | The protein encoded by this gene is a serine-threonine kinase, belonging to the glycogen synthase kinase subfamily. It is involved in energy metabolism, neuronal cell development, and body pattern formation. Polymorphisms in this 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. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.[provided by RefSeq, Sep 2009] |
| Function | Constitutively active protein kinase that acts as a negative regulator in the hormonal control of glucose homeostasis, Wnt signaling and regulation of transcription factors and microtubules, by phosphorylating and inactivating glycogen synthase (GYS1 or GYS2), EIF2B, CTNNB1/beta-catenin, APC, AXIN1, DPYSL2/CRMP2, JUN, NFATC1/NFATC, MAPT/TAU and MACF1. Requires primed phosphorylation of the majority of its substrates. In skeletal muscle, contributes to insulin regulation of glycogen synthesis by phosphorylating and inhibiting GYS1 activity and hence glycogen synthesis. May also mediate the development of insulin resistance by regulating activation of transcription factors. Regulates protein synthesis by controlling the activity of initiation factor 2B (EIF2BE/EIF2B5) in the same manner as glycogen synthase. In Wnt signaling, GSK3B forms a multimeric complex with APC, AXIN1 and CTNNB1/beta-catenin and phosphorylates the N-terminus of CTNNB1 leading to its degradation mediated by ubiquitin/proteasomes. Phosphorylates JUN at sites proximal to its DNA-binding domain, thereby reducing its affinity for DNA. Phosphorylates NFATC1/NFATC on conserved serine residues promoting NFATC1/NFATC nuclear export, shutting off NFATC1/NFATC gene regulation, and thereby opposing the action of calcineurin. Phosphorylates MAPT/TAU on 'Thr-548', decreasing significantly MAPT/TAU ability to bind and stabilize microtubules. MAPT/TAU is the principal component of neurofibrillary tangles in Alzheimer disease. Plays an important role in ERBB2-dependent stabilization of microtubules at the cell cortex. Phosphorylates MACF1, inhibiting its binding to microtubules which is critical for its role in bulge stem cell migration and skin wound repair. Probably regulates NF-kappa-B (NFKB1) at the transcriptional level and is required for the NF-kappa-B-mediated anti-apoptotic response to TNF-alpha (TNF/TNFA). Negatively regulates replication in pancreatic beta-cells, resulting in apoptosis, loss of beta-cells and diabetes. Through phosphorylation of the anti-apoptotic protein MCL1, may control cell apoptosis in response to growth factors deprivation. Phosphorylates MUC1 in breast cancer cells, decreasing the interaction of MUC1 with CTNNB1/beta-catenin. Is necessary for the establishment of neuronal polarity and axon outgrowth. Phosphorylates MARK2, leading to inhibit its activity. Phosphorylates SIK1 at 'Thr-182', leading to sustain its activity. Phosphorylates ZC3HAV1 which enhances its antiviral activity. Phosphorylates SNAI1, leading to its BTRC-triggered ubiquitination and proteasomal degradation. Phosphorylates SFPQ at 'Thr-687' upon T-cell activation. Phosphorylates NR1D1 st 'Ser-55' and 'Ser-59' and stabilizes it by protecting it from proteasomal degradation. Regulates the circadian clock via phosphorylation of the major clock components including ARNTL/BMAL1, CLOCK and PER2. Phosphorylates CLOCK AT 'Ser-427' and targets it for proteasomal degradation. Phosphorylates ARNTL/BMAL1 at 'Ser-17' and 'Ser-21' and primes it for ubiquitination and proteasomal degradation. Phosphorylates OGT at 'Ser-3' or 'Ser-4' which positively regulates its activity. Phosphorylates MYCN in neuroblastoma cells which may promote its degradation. [UniProt] |
| Calculated Mw | 47 kDa |
| PTM | Phosphorylated by AKT1 and ILK1. Upon insulin-mediated signaling, the activated PKB/AKT1 protein kinase phosphorylates and desactivates GSK3B, resulting in the dephosphorylation and activation of GYS1. Activated by phosphorylation at Tyr-216 (PubMed:25169422). Inactivated by phosphorylation at Ser-9 (Probable).<br>Mono-ADP-ribosylation by PARP10 negatively regulates kinase activity. |

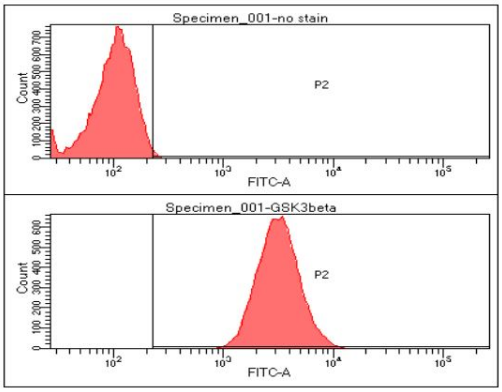
## Images



ARG56920 anti-GSK3 beta antibody [1F7] ICC/IF image

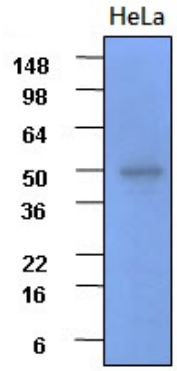
Immunoflorescense: HeLa cell line stained with ARG56920 anti-GSK3 beta antibody [1F7] at 1:100 (Green).

DAPI (Blue) for nucleus staining.




ARG56920 anti-GSK3 beta antibody [1F7] FACS image

Flow Cytometry: HeLa cell line stained with ARG56920 anti-GSK3 beta antibody [1F7] at 2-5 µg for 1x10^6 cells. Secondary antibody: Goat anti-Mouse IgG Alexa fluor 488 conjugate.




ARG56920 anti-GSK3 beta antibody [1F7] WB image

Western blot: 30 µg of HeLa cell lysates stained with ARG56920 anti-GSK3 beta antibody [1F7] at 1:2000.