



## Mouse Anti-GSK-3 Beta antibody

SLM-33293M

**Product Name** [KO validated anti] GSK-3 Beta

**Chinese Name** 糖原合酶激酶-3 $\beta$  单克隆抗体

**Alias** Glycogen synthase kinase-3 beta; glycogen synthase kinase 3 beta; GSK3 $\beta$ ; GSK 3 beta; GSK 3B; GSK3B; GSK3B protein; GSK3beta isoform; GSK3 beta; Serine/threonine-protein kinase GSK3B; GSK3B\_HUMAN. GSK 3 $\beta$ ; GSK 3  $\beta$ ; GSK-3 $\beta$ ; GSK3 $\beta$ ;

**Research Area** Cell biology transcriptional regulatory factor Kinases and Phosphatases

**Immunogen Species** Mouse

**Clonality** Monoclonal

**Clone NO.** 3A6

**React Species** Human,Mouse,Rat

**Applications** WB=1:500-1000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:200-500 (Paraffin sections need antigen repair)  
not yet tested in other applications.  
optimal dilutions/concentrations should be determined by the end user.

**Theoretical molecular weight** 47kDa

**Cellular localization** The nucleus cytoplasmic The cell membrane

**Form** Liquid

**Concentration** 1mg/ml

**immunogen** KLH conjugated synthetic peptide derived from human GSK-3 Beta

**Lsotype** IgG

**Purification** affinity purified by Protein G

**Buffer Solution** 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

**Storage** Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

**Attention** This product as supplied is intended for research use only, not for use in human, therapeutic

or diagnostic applications.

## PubMed

### [PubMed](#)

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, 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. 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.

## Product Detail

### **Subunit:**

Monomer. Interacts with ARRB2 and DISC1. Interacts with CABYR, MMP2, MUC1, NIN and PRUNE Interacts with AXIN1; the interaction mediates hyperphosphorylation of CTNNB1 leading to its ubiquitination and destruction. Interacts with and phosphorylates

SNAIL1. Interacts with DNM1L (via a C-terminal domain). Found in a complex composed of MACF1, APC, AXIN1, CTNNB1 and GSK3B.

**Subcellular Location:**

Cytoplasm. Nucleus. Cell membrane. Note=The phosphorylated form shows localization to cytoplasm and cell membrane. The MEMO1-RHOA-DIAPH1 signaling pathway controls localization of the phosphorylated form to the cell membrane.

**Tissue Specificity:**

Expressed in testis, thymus, prostate and ovary and weakly expressed in lung, brain and kidney.

**Post-translational modifications:**

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.

**Similarity:**

Belongs to the protein kinase superfamily. CMGC Ser/Thr protein kinase family. GSK-3 subfamily.

Contains 1 protein kinase domain.

**SWISS:**

P49841

**Gene ID:**

2932

**Database links:**

[Entrez Gene: 2932](#) Human

[Entrez Gene: 56637](#) Mouse

[Entrez Gene: 84027](#) Rat

[Omim: 605004](#) Human

[SwissProt: P49841](#) Human

[SwissProt: Q9WV60](#) Mouse

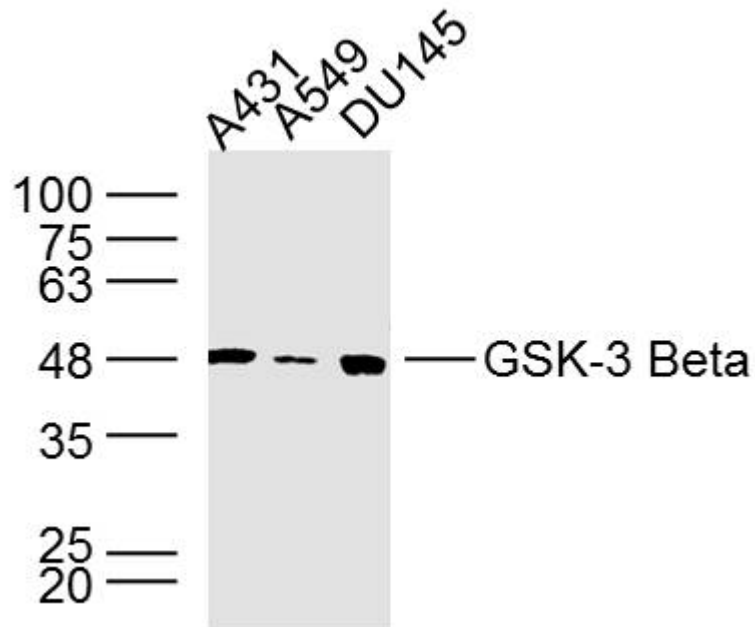
[SwissProt: P18266](#) Rat

[Unigene: 445733](#) Human

[Unigene: 394930](#) Mouse

[Unigene: 10426](#) Rat

**Product  
Picture**



Sample:

A431 Cell (Human) Lysate at 40 ug

A549 Cell (Human) Lysate at 40 ug

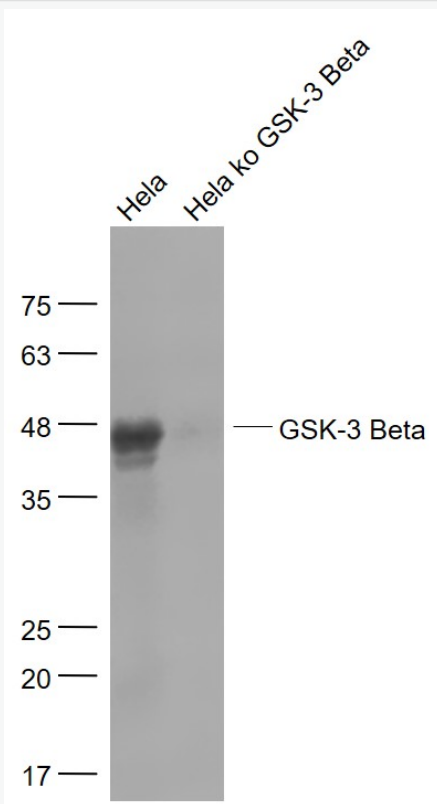
DU145 Cell (Human) Lysate at 40 ug

Primary: Anti- GSK-3 Beta (SLM-33293M) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Mouse IgG at 1/20000 dilution

Predicted band size: 47 kD

Observed band size: 47 kD



Sample:

HeLa(Human) Cell Lysate at 30 ug

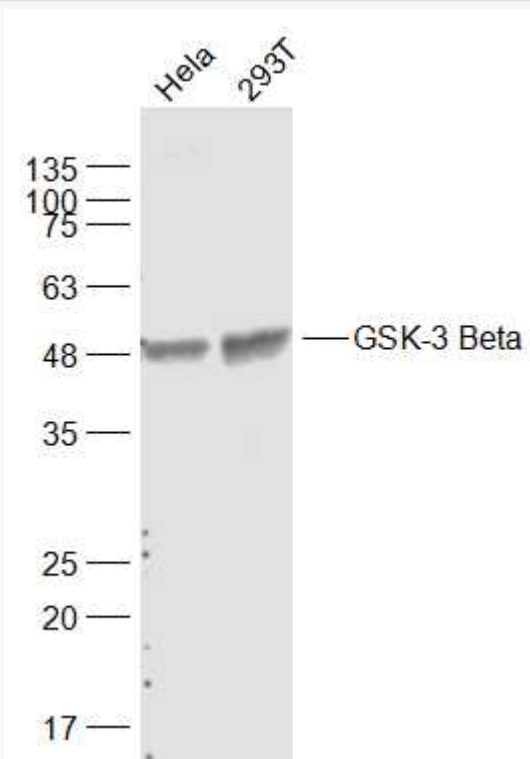
HeLa ko GSK-3 Beta (Human) Cell Lysate at 30 ug

Primary: Anti-GSK-3 Beta (SLM-33293M) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Mouse IgG at 1/20000 dilution

Predicted band size: 47 kD

Observed band size: 47 kD



Sample:

HeLa(Human) Cell Lysate at 30 ug

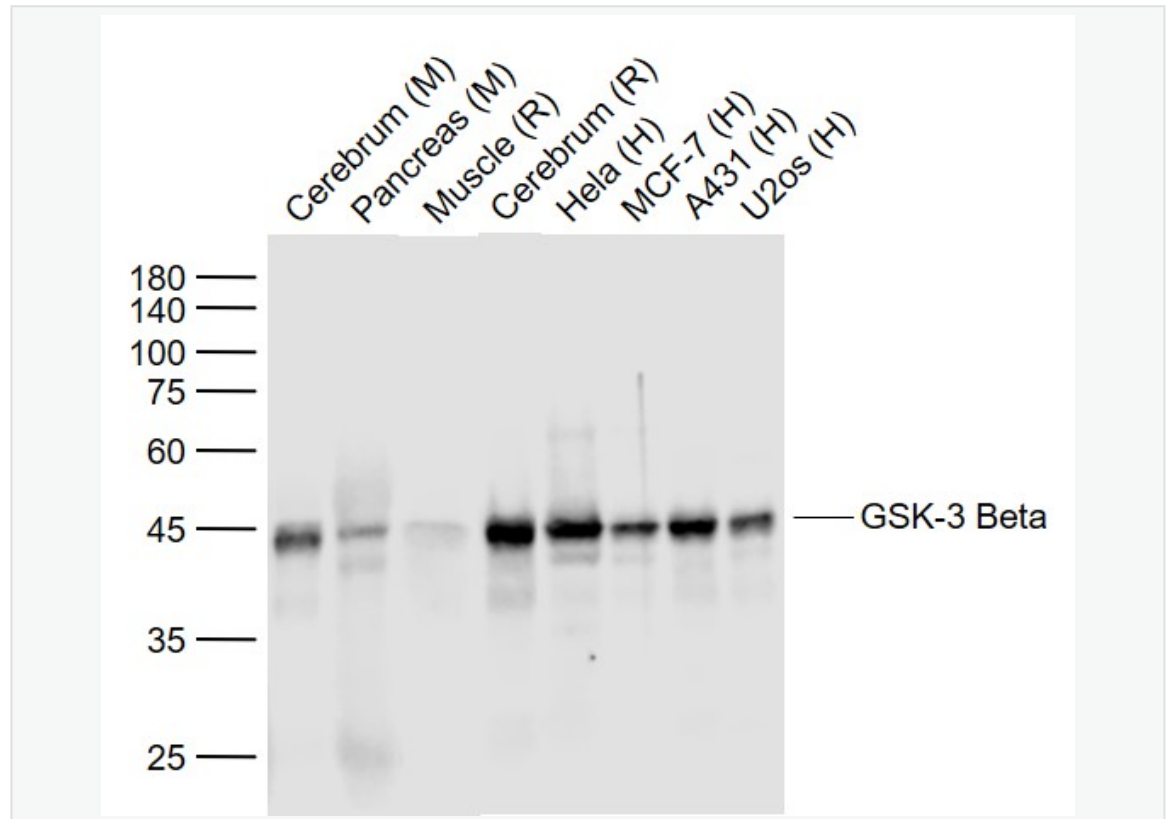
293T(Human) Cell Lysate at 30 ug

Primary: Anti-GSK-3 Beta (SLM-33293M) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Mouse IgG at 1/20000 dilution

Predicted band size: 47 kD

Observed band size: 48 kD



Sample:

Lane 1: Cerebrum (Mouse) Lysate at 40 ug

Lane 2: Pancreas (Mouse) Lysate at 40 ug

Lane 3: Muscle (Rat) Lysate at 40 ug

Lane 4: Cerebrum (Rat) Lysate at 40 ug

Lane 5: Hela (Human) Cell Lysate at 30 ug

Lane 6: MCF-7 (Human) Cell Lysate at 30 ug

Lane 7: A431 (Human) Cell Lysate at 30 ug

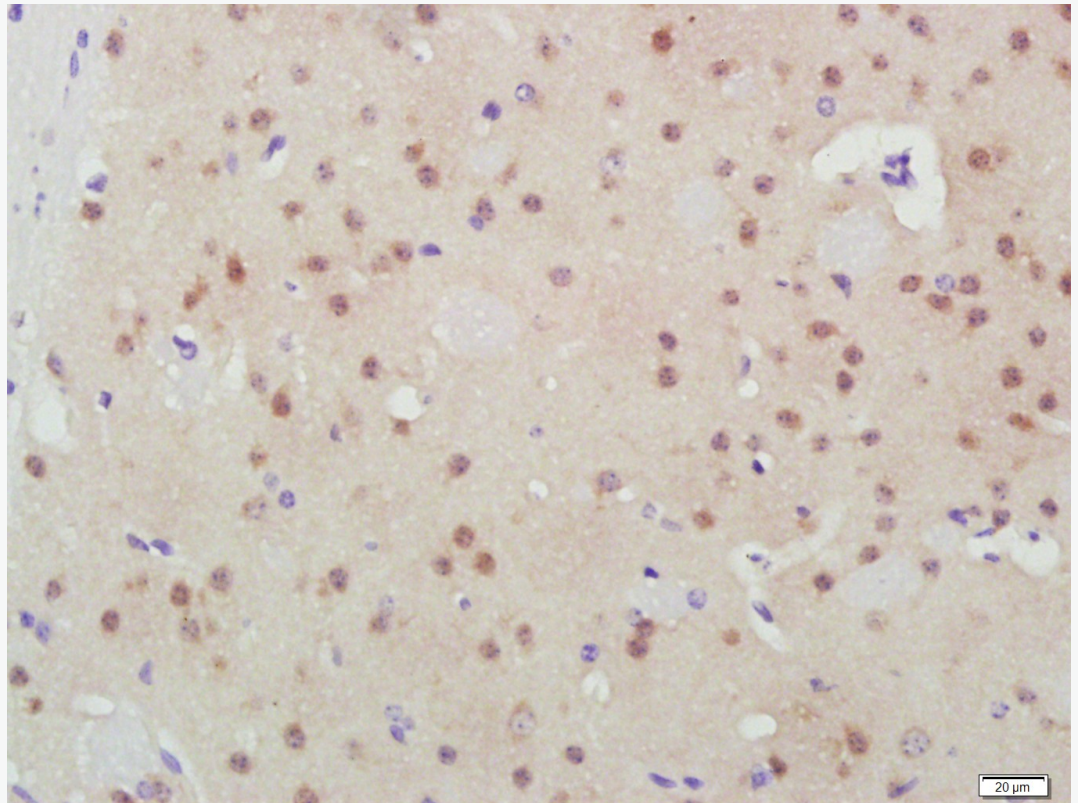
Lane 8: U2os (Human) Cell Lysate at 30 ug

Primary: Anti-GSK-3 Beta (SLM-33293M) at 1/1000 dilution

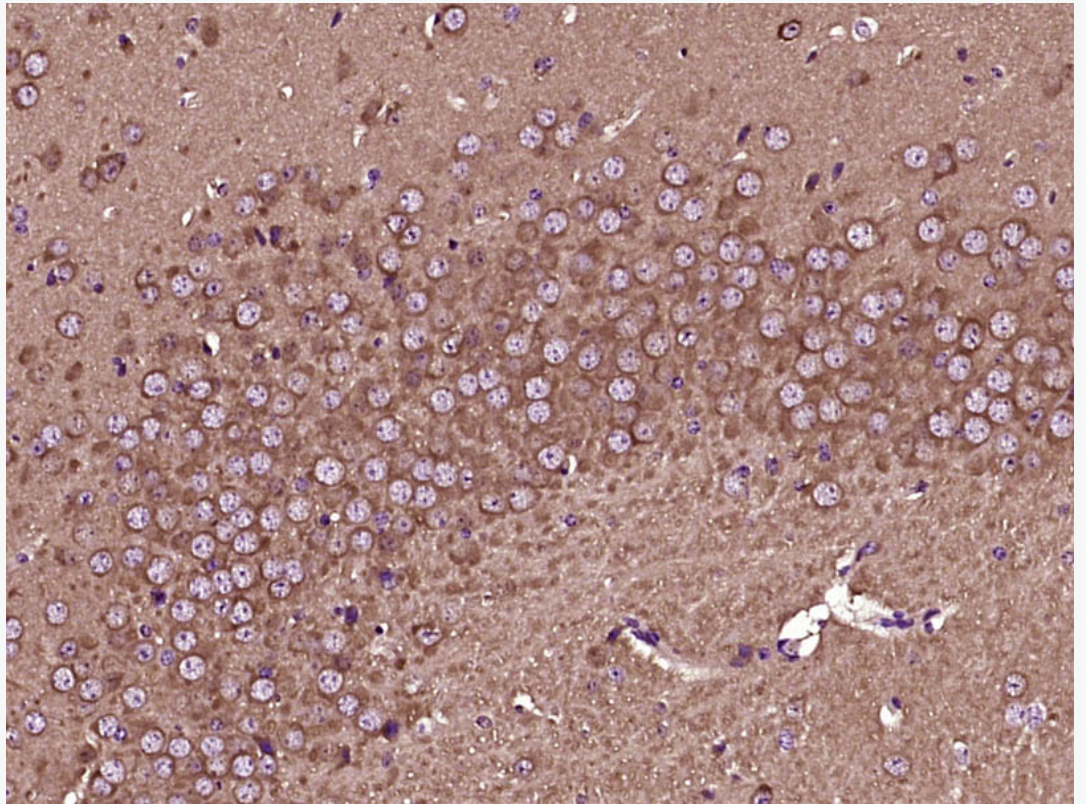
Secondary: IRDye800CW Goat Anti-Mouse IgG at 1/20000 dilution

Predicted band size: 47 kD

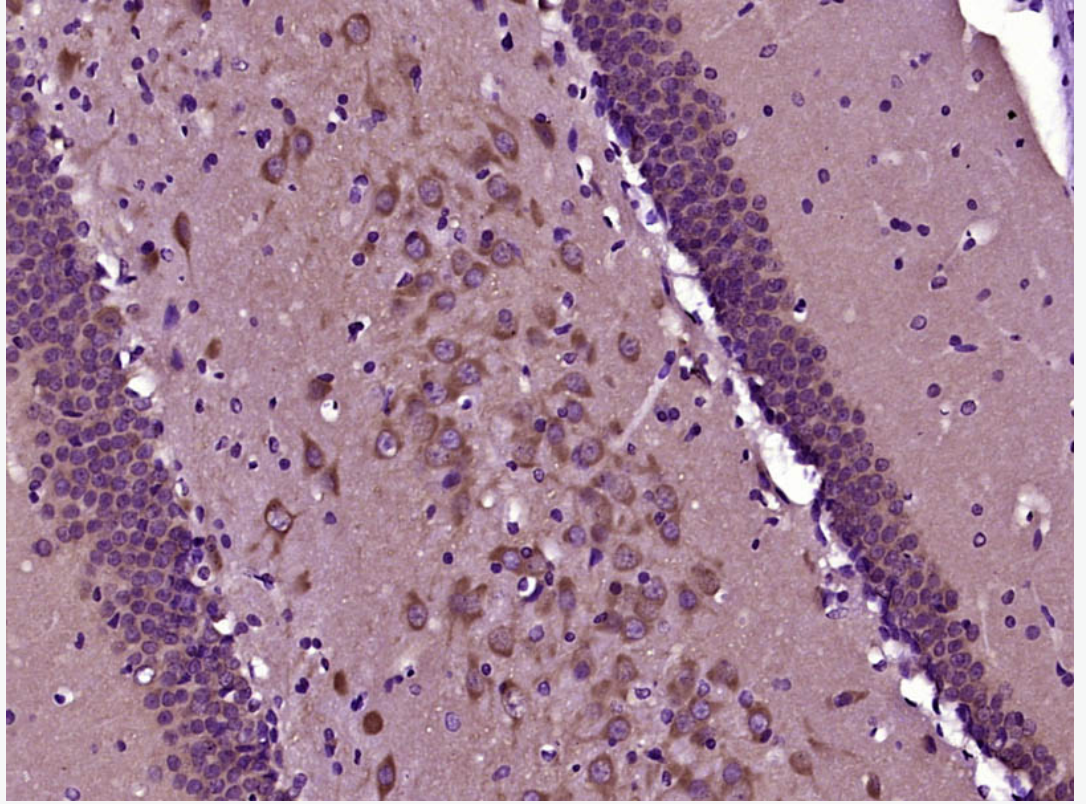
Observed band size: 45 kD



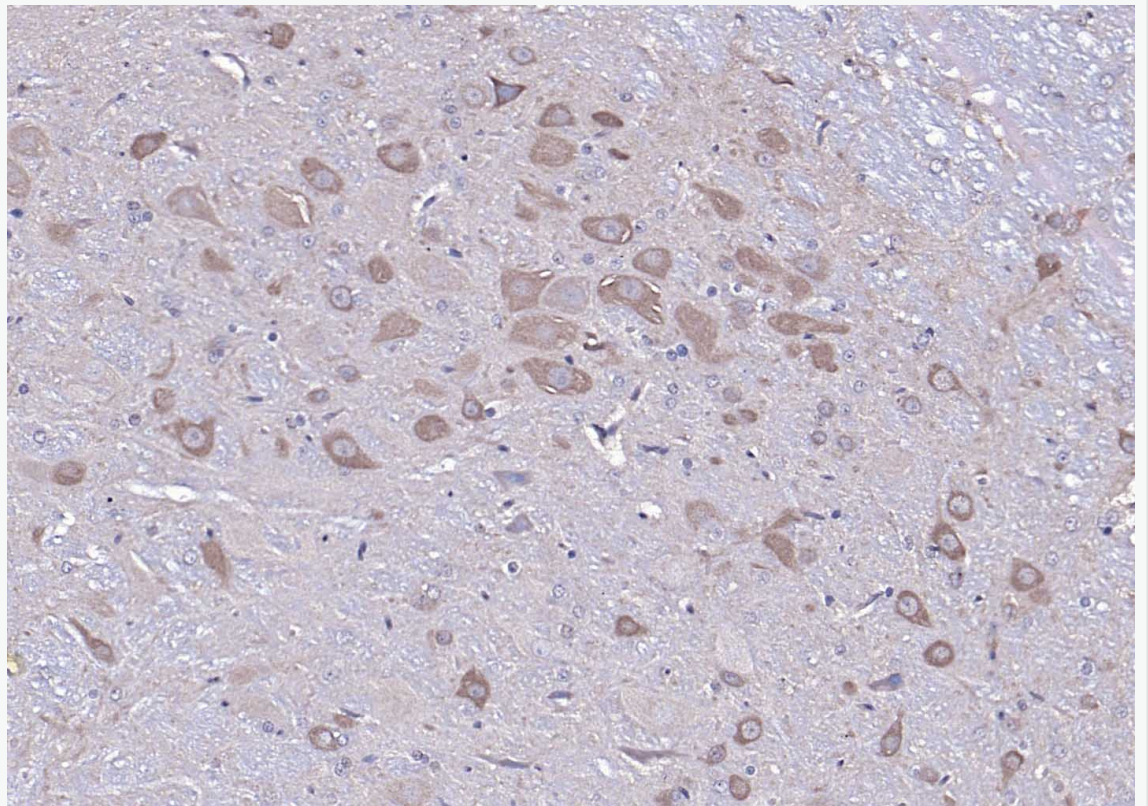
Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (SLM-33293M) at 1:400 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.



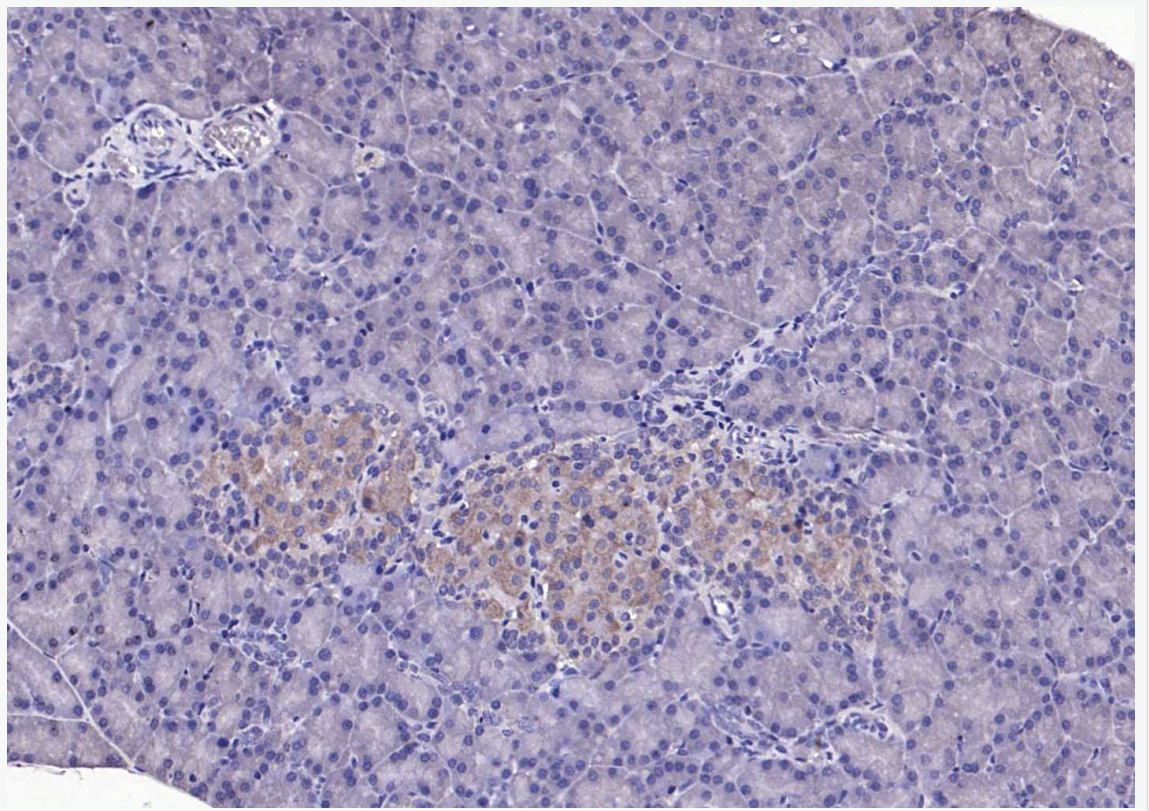
Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (ascites of SLM-33293M 3A6) at 1:2000 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.



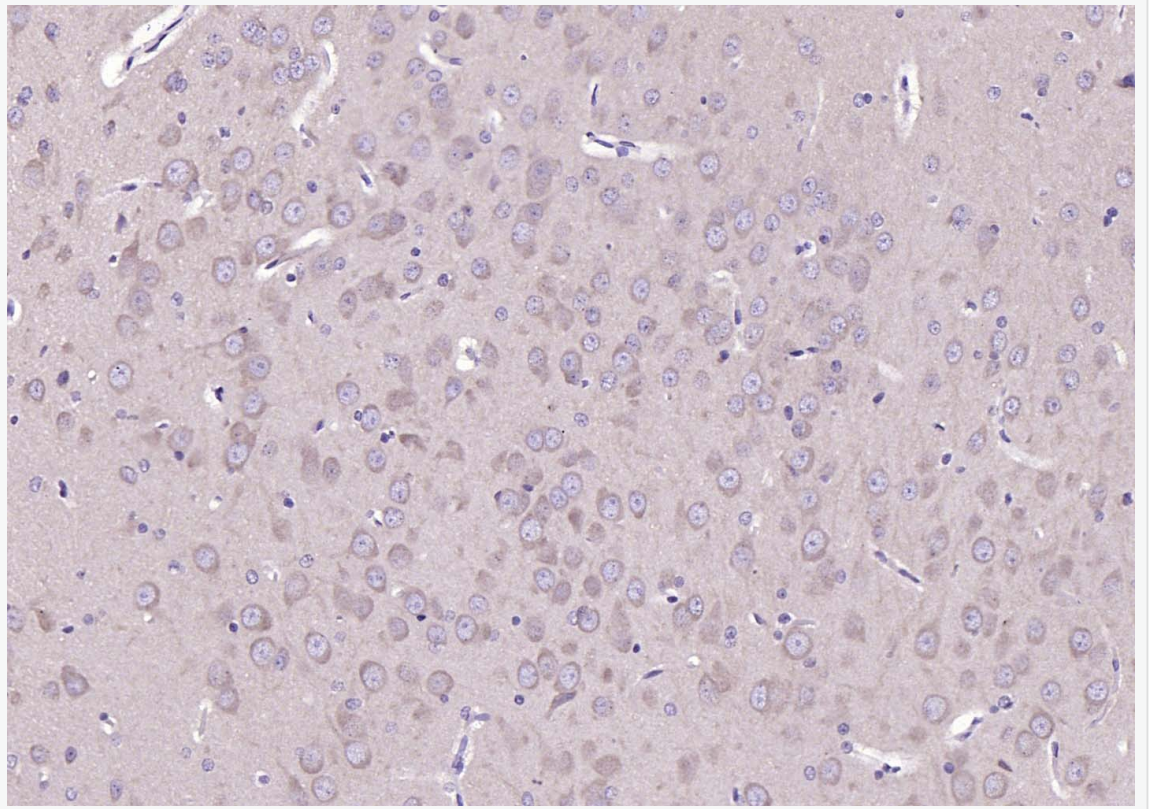
Paraformaldehyde-fixed, paraffin embedded (Rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (ascites of SLM-33293M 3A6) at 1:2000 overnight at 4°C, followed by a conjugated secondary (sp-0023) for 20 minutes and DAB staining.



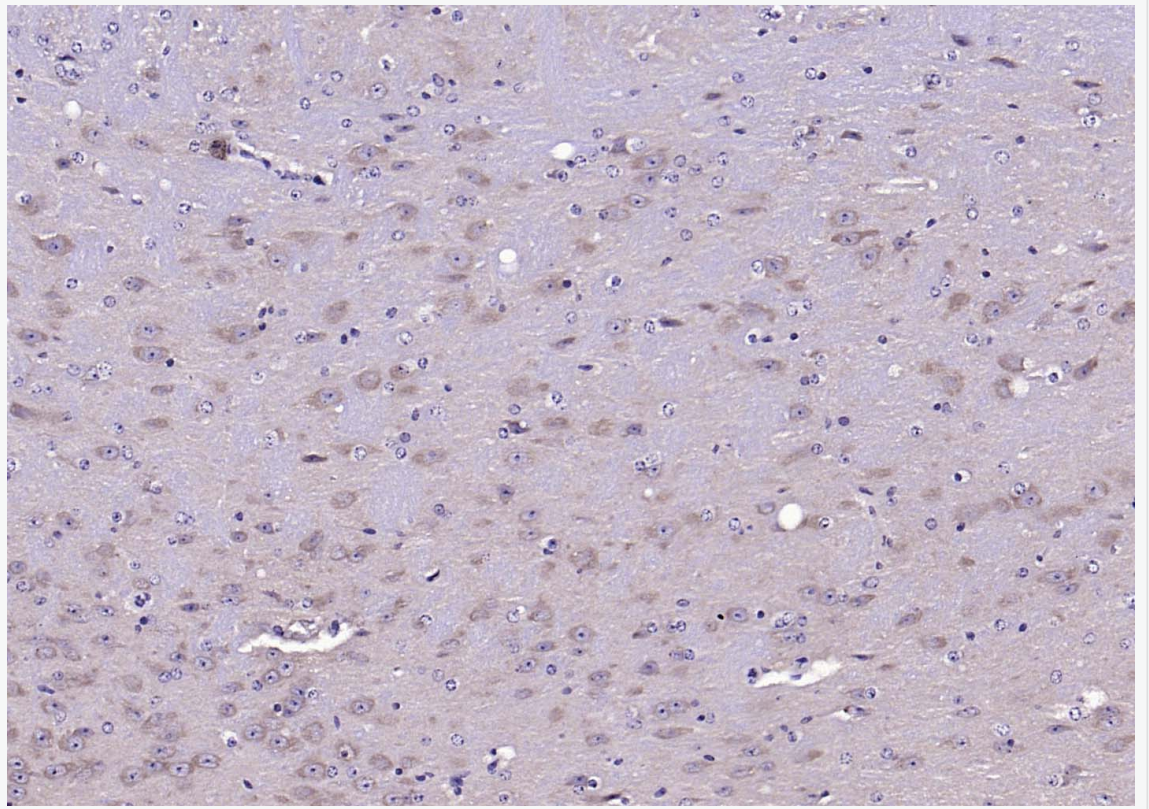
Paraformaldehyde-fixed, paraffin embedded (rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



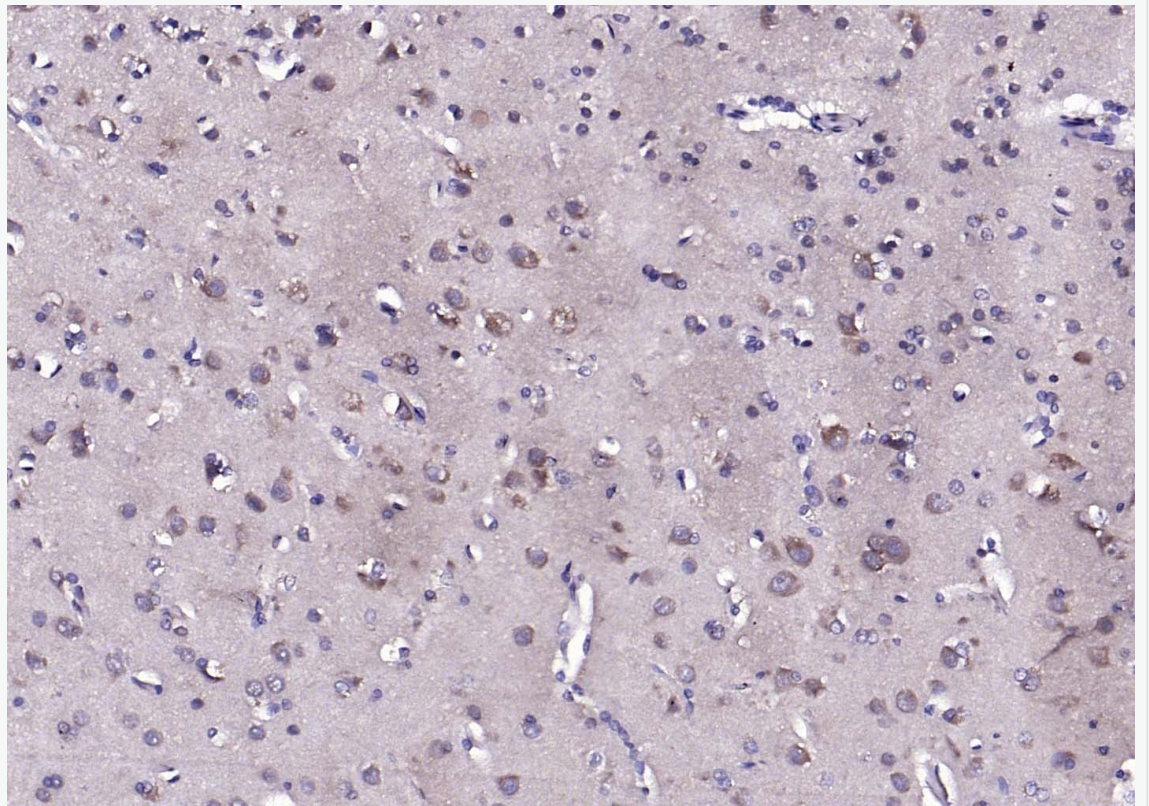
Paraformaldehyde-fixed, paraffin embedded (rat pancreas); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



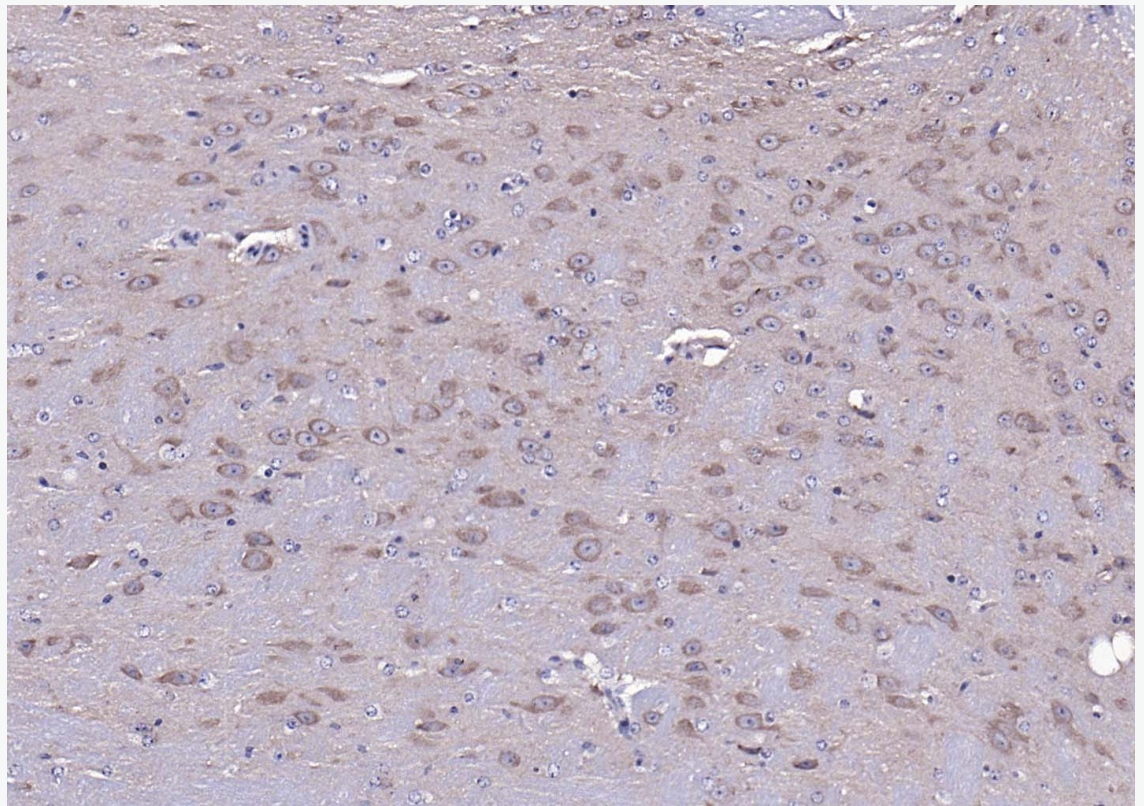
Paraformaldehyde-fixed, paraffin embedded (rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



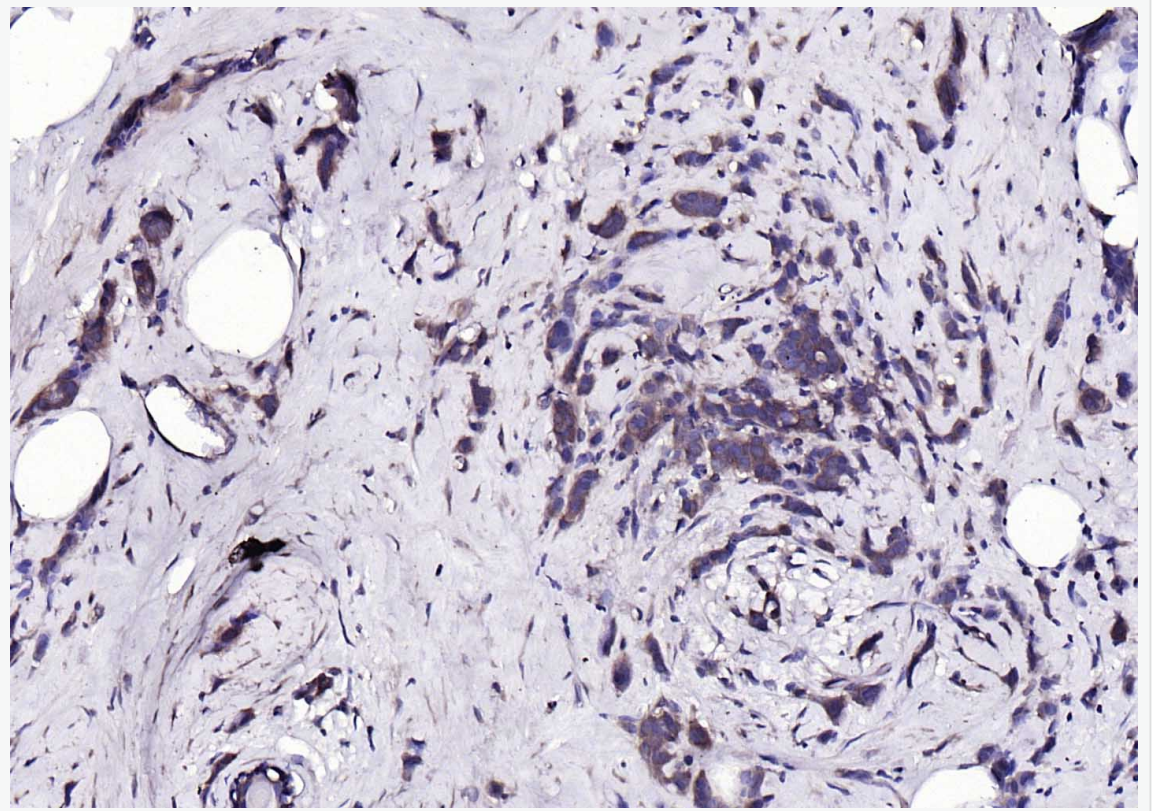
Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



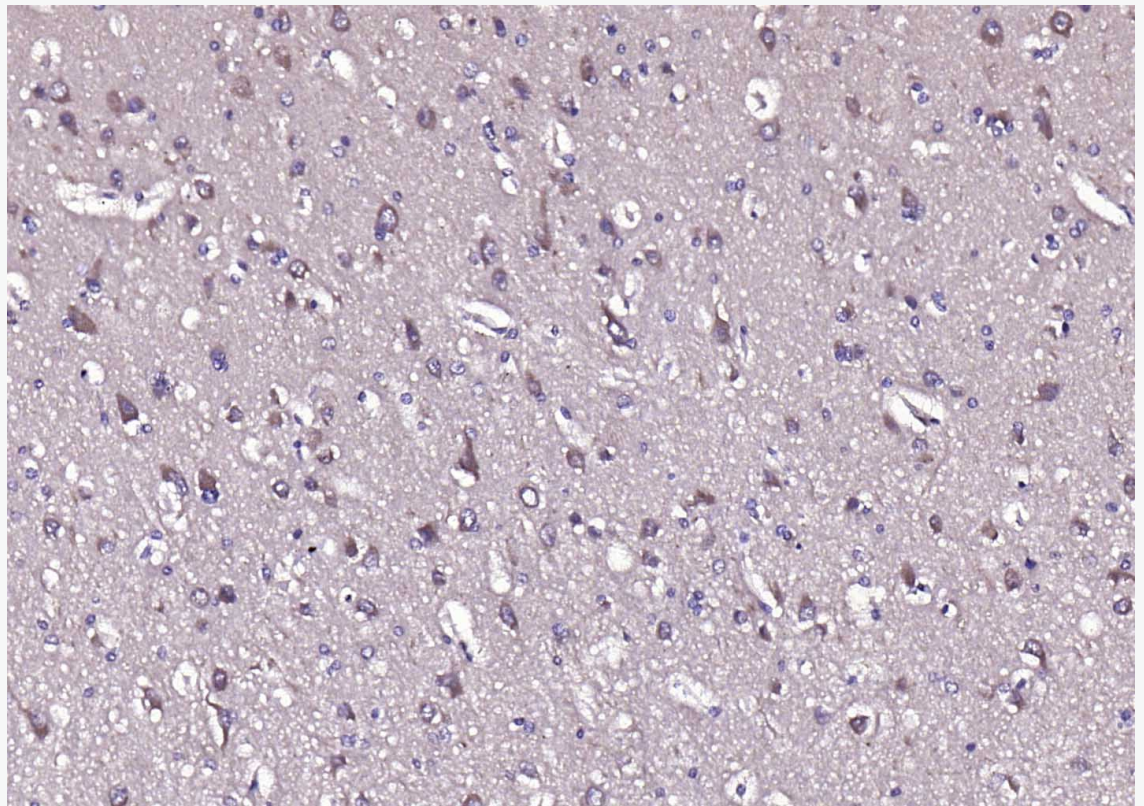
Paraformaldehyde-fixed, paraffin embedded (human brain glioma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



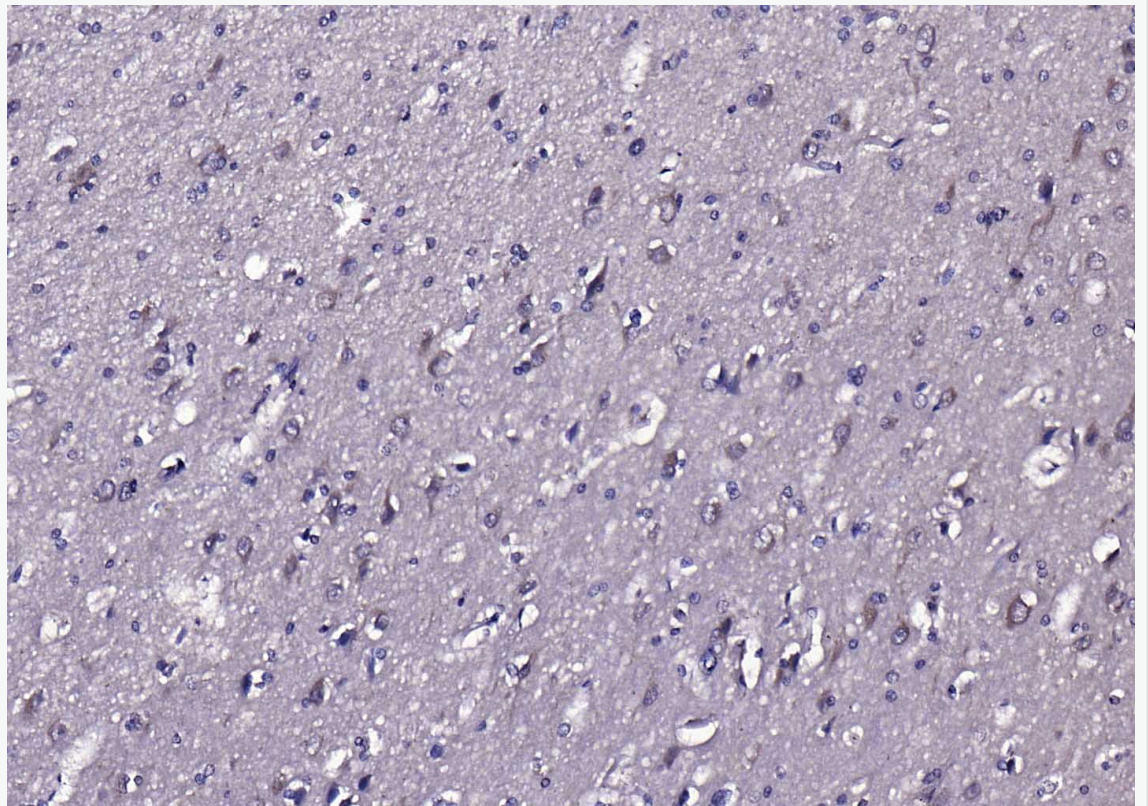
Paraformaldehyde-fixed, paraffin embedded (mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



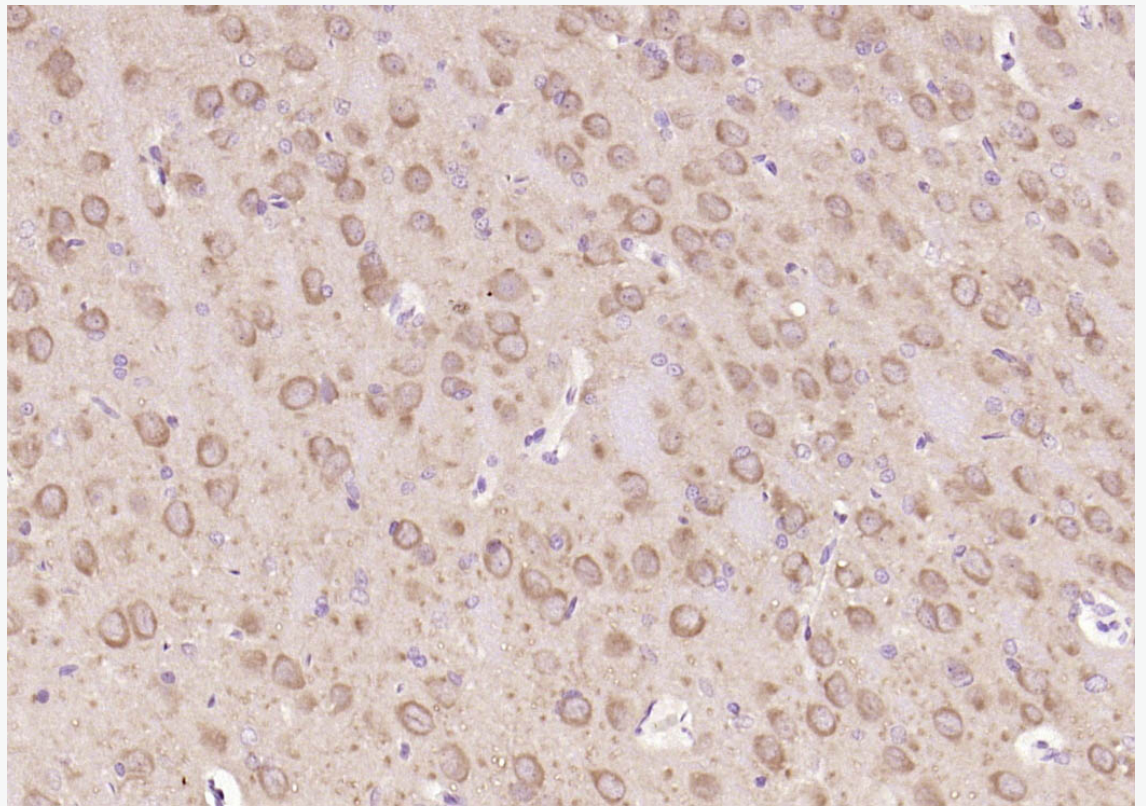
Paraformaldehyde-fixed, paraffin embedded (human breast carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



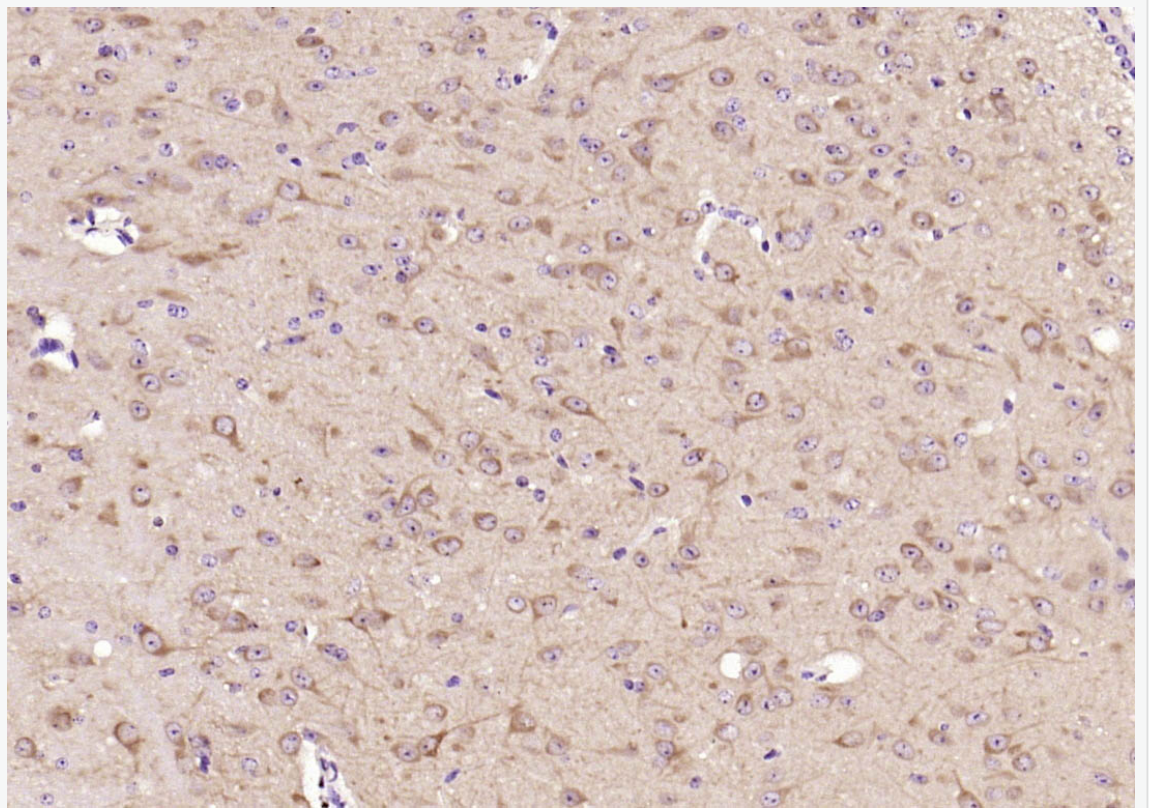
Paraformaldehyde-fixed, paraffin embedded (human brain ); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (cell supernatant of SLM-33293M 3A6) at overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



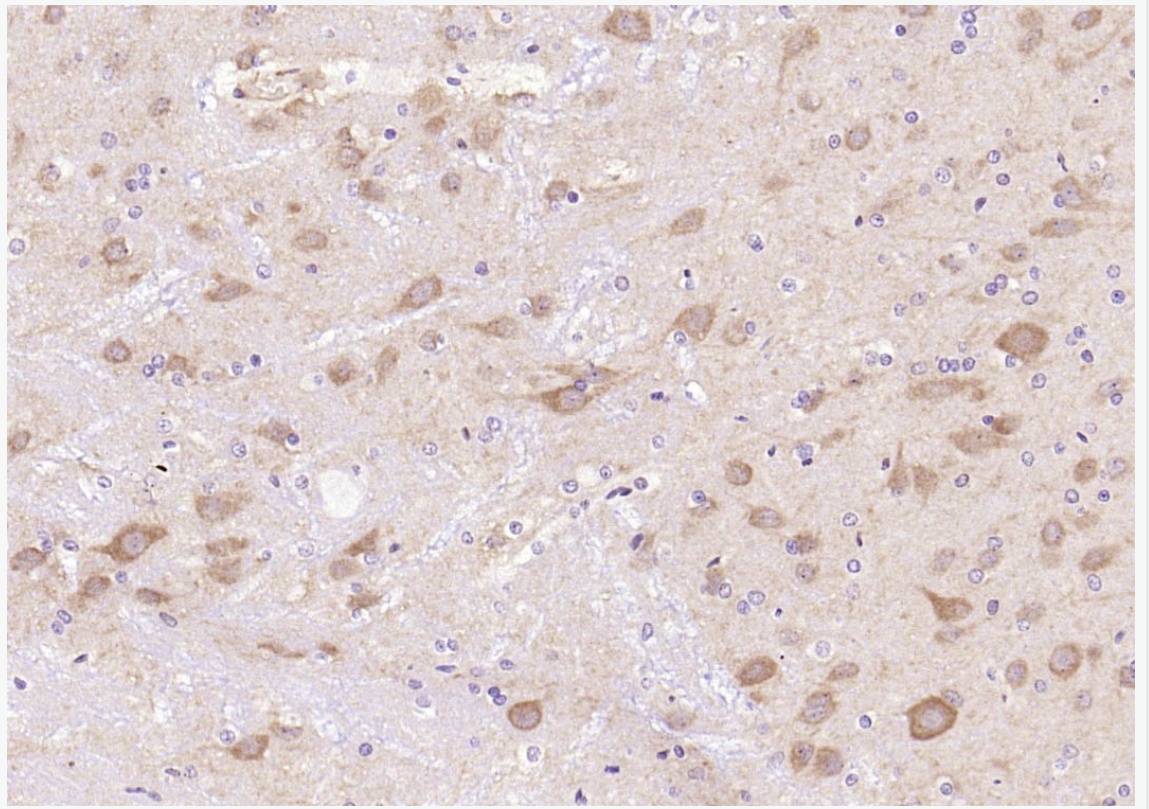
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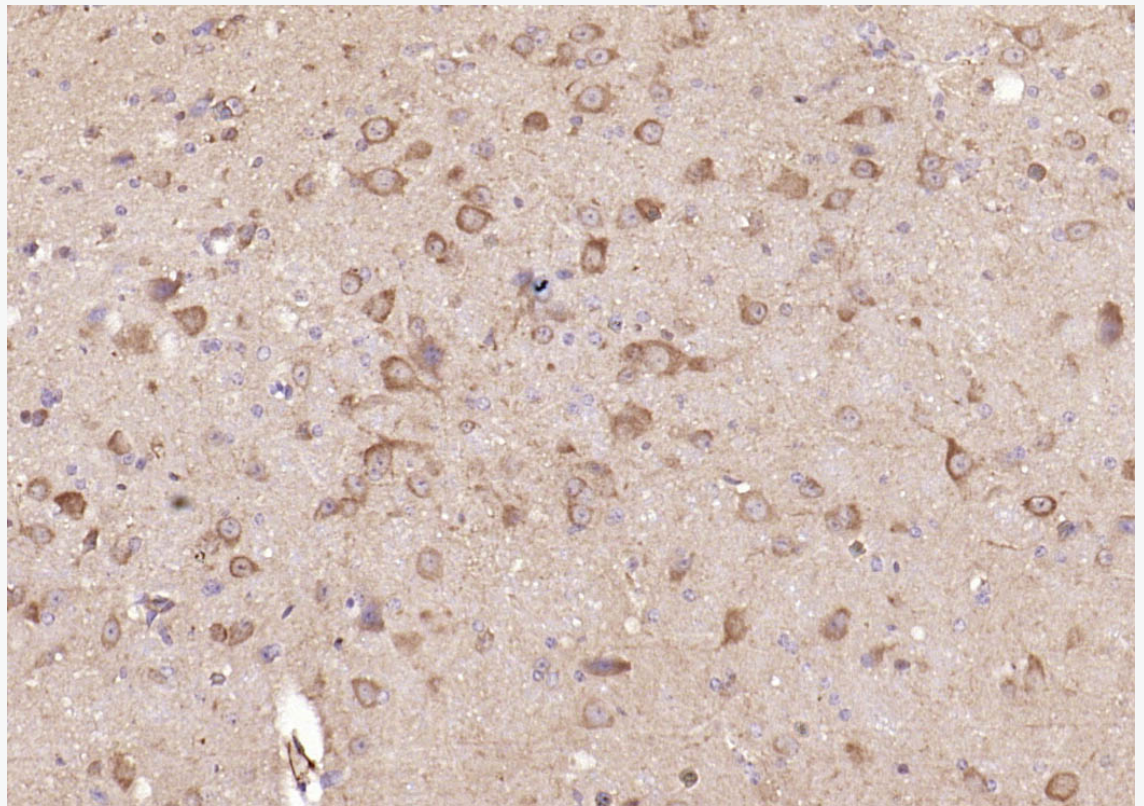
Paraformaldehyde-fixed, paraffin embedded (rat brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (SLM-33293M) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



Paraformaldehyde-fixed, paraffin embedded (mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (GSK-3 Beta) Monoclonal Antibody, Unconjugated (SLM-33293M) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Mouse)(sp-0024) instructions and DAB staining.



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