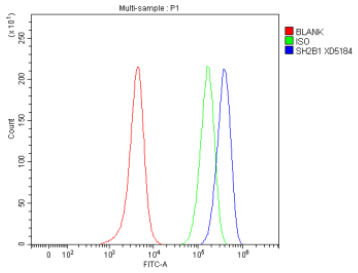
SH2B1 Antibody / SH2B adapter protein 1 (FY12892)

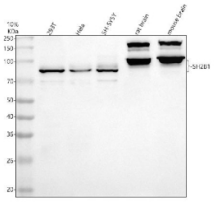
Catalog No.	Formulation	Size
FY12892	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NRF2
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SH2B1 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-SH2B1 antibody. Overlay histogram showing SH-SY5Y cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-SH2B1 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of SH2B1 using anti-SH2B1 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human 293T whole cell lysates, Lane 2: human Hela whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-SH2B1 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A light ~70 kDa and stronger ~85 kDa band are observed in human lysates, consistent with expression of shorter and full-length isoforms. Mouse and rat brain samples display a 90-100 kDa doublet and higher 140-150 kDa doublet, likely reflecting phosphorylated and complexed forms of SH2B1 previously reported in neuronal tissue.

Description

SH2B1 antibody detects SH2B adapter protein 1, a signaling adaptor that regulates insulin, leptin, and growth factor receptor pathways controlling metabolism and energy balance. Encoded by the SH2B1 gene on chromosome 16p11.2, this cytoplasmic adaptor belongs to the SH2B family of signal transduction proteins and serves as a key modulator of receptor tyrosine kinase and cytokine receptor signaling. SH2B1 enhances insulin receptor signaling, JAK2 activation, and downstream PI3K and MAPK pathways involved in glucose metabolism, cell growth, and neuronal signaling.

Structurally, SH2B1 is a 756-amino-acid protein of approximately 85 kilodaltons containing an N-terminal dimerization domain, a central pleckstrin homology (PH) domain, and a C-terminal Src homology 2 (SH2) domain that mediates phosphotyrosine-dependent interactions. It exists in multiple isoforms (alpha, beta, gamma, and delta) produced by alternative splicing, with tissue-specific expression across brain, liver, adipose tissue, and skeletal muscle. The protein acts as a scaffold that bridges receptor kinases to intracellular effectors, amplifying or modulating signaling intensity and duration.

The SH2B1 antibody is widely used in metabolism, endocrinology, and neurobiology research to study insulin signaling, leptin sensitivity, and receptor-mediated pathways regulating energy homeostasis. Western blot analysis detects a band of approximately 85 kilodaltons corresponding to SH2B1, while immunofluorescence reveals cytoplasmic and plasma membrane localization. This antibody is an essential reagent for exploring the molecular basis of metabolic signaling and neuronal regulation.

Functionally, SH2B1 binds to insulin and leptin receptors through JAK2 and IRS1, enhancing phosphorylation cascades that regulate glucose uptake and appetite control. Loss or mutation of SH2B1 disrupts these pathways, leading to insulin resistance, obesity, and metabolic syndrome. Deletions encompassing SH2B1 are associated with severe early-onset obesity and neurobehavioral abnormalities, while overexpression can increase leptin sensitivity and improve glucose tolerance. Beyond metabolism, SH2B1 contributes to neuronal growth, regeneration, and synaptic plasticity through its modulation of NGF and BDNF signaling. The SH2B1 antibody provides a robust tool for studying these signaling mechanisms and their implications in metabolic and neurological disorders. NSJ Bioreagents validates this antibody for its applications, ensuring specific and reproducible results across biological systems.

Application Notes

Optimal dilution of the SH2B1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SH2B1 recombinant protein (Position: W26-Q715) was used as the immunogen for the SH2B1 antibody.

Storage

After reconstitution, the SH2B1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.