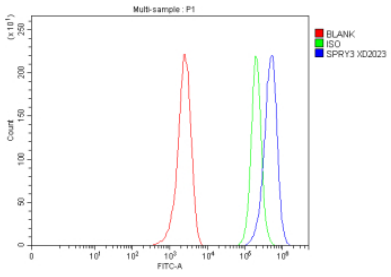
SPRY3 Antibody / Sprouty RTK signaling antagonist 3 (FY13384)

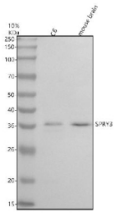
Catalog No.	Formulation	Size
FY13384	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
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	O43610
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SPRY3 antibody is available for research use only.



Flow Cytometry analysis of human MCF-7 cells using anti-SPRY3 antibody. Overlay histogram showing MCF-7 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-SPRY3 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 SPRY3 using anti-SPRY3 antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat C6 whole cell lysates, Lane 2: 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-SPRY3 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. SPRY3 antibody detects a band at approximately 36 kDa in rat C6 and mouse brain lysates. Although SPRY3 has a predicted mass near 31 kDa, the upward shift is consistent with documented mobility behavior of Sprouty family proteins caused by cysteine-rich domain structure and phosphorylation-dependent modification.

Description

SPRY3 antibody detects Sprouty RTK signaling antagonist 3, a negative regulator of receptor tyrosine kinase (RTK) signaling encoded by the SPRY3 gene located on the X and Y chromosomes (Xp22.33/Yp11.3). SPRY3 belongs to the sprouty family of cytoplasmic signaling modulators that fine-tune growth factor receptor signaling, particularly pathways initiated by fibroblast growth factors (FGFs), epidermal growth factor (EGF), and vascular endothelial growth factor (VEGF). It is expressed in brain, lung, placenta, and testes, where it regulates cell growth, differentiation, and angiogenesis.

Structurally, SPRY3 contains a conserved cysteine-rich C-terminal domain responsible for membrane association and a variable N-terminal region that mediates interaction with adapter proteins such as GRB2 and c-CBL. It belongs to the sprouty protein family (SPRY1-4), known for modulating Ras/MAPK signaling by interfering with RAF activation. Co-localization studies show SPRY3 associated with endosomal membranes and perinuclear regions, reflecting its regulatory role at signal transduction interfaces.

Functionally, SPRY3 acts as an inhibitor of the Ras/MAPK pathway, suppressing excessive signaling following receptor activation. It prevents cell overproliferation and supports proper developmental patterning. In neurons, SPRY3 regulates axonal branching and synaptic plasticity, while in endothelial cells it modulates angiogenic responses to VEGF. SPRY3 also interacts with E3 ubiquitin ligases such as c-CBL, influencing receptor internalization and degradation. Known downstream pathways include ERK1/2, PI3K-AKT, and Rho family GTPase signaling.

Expression of SPRY3 is developmentally regulated, with high levels observed in fetal brain and during vascular remodeling. Dysregulation or loss of SPRY3 has been linked to tumorigenesis, impaired angiogenesis, and developmental disorders. Deletion of SPRY3 in the pseudoautosomal region may contribute to neurodevelopmental phenotypes in certain chromosomal abnormalities. Pathway associations include growth factor receptor signaling, neuronal differentiation, and vascular development. In disease models, SPRY3 acts as a tumor suppressor through attenuation of mitogenic signaling.

The SPRY3 antibody from NSJ Bioreagents is a valuable tool for studying growth factor signaling regulation, angiogenesis, and neurodevelopmental pathways.

Application Notes

Optimal dilution of the SPRY3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human SPRY3 recombinant protein (Position: M1-R162) was used as the immunogen for the SPRY3 antibody.

Storage

After reconstitution, the SPRY3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.