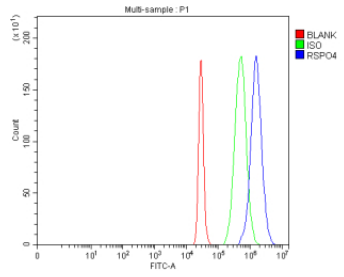
RSPO4 Antibody / R-spondin-4 (FY12380)

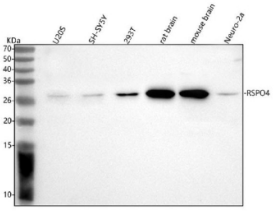
Catalog No.	Formulation	Size
FY12380	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	Q2I0M5
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RSPO4 antibody is available for research use only.



Flow Cytometry analysis of 293T cells using anti-RSPO4 antibody. Overlay histogram showing 293T cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-RSPO4 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 (Red line) was also used as a control.



Western blot analysis of RSPO4 using anti-RSPO4 antibody. Lane 1: human U20S whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human 293T whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: mouse brain tissue lysates, Lane 6: mouse Neuro-2a whole cell 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-RSPO4 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 enhanced chemiluminescent. The expected molecular weight of RSPO4 is ~26 kDa.

Description

The RSPO4 antibody targets R-spondin-4, a secreted growth factor encoded by the RSPO4 gene that acts as a potent activator of Wnt/beta-catenin signaling. R-spondin-4 belongs to the R-spondin family (RSPO1-4), which enhances Wnt receptor complex stability and signaling intensity through interactions with LGR4-6 receptors and the transmembrane E3 ubiquitin ligases RNF43 and ZNRF3. By amplifying Wnt responses, R-spondin-4 plays key roles in epithelial development, tissue repair, and organogenesis. The RSPO4 antibody enables precise detection of this signaling enhancer and supports research into developmental biology and regenerative medicine.

R-spondin-4 is characterized by two cysteine-rich furin-like domains that mediate receptor binding and a thrombospondin type 1 (TSP1) domain that influences protein localization. Through these domains, R-spondin-4 stabilizes Frizzled and LRP5/6 receptors on the cell surface, prolonging Wnt pathway activation. The RSPO4 antibody helps researchers examine this process by detecting protein expression in tissues where Wnt signaling drives growth and differentiation, including skin, limb, and nail matrix.

Mutations in RSPO4 cause anonychia congenita, a rare developmental disorder marked by complete or partial absence of nails. Such mutations impair Wnt pathway activation, underscoring R-spondin-4's essential role in ectodermal appendage development. The RSPO4 antibody is invaluable for exploring these mechanisms, allowing measurement of protein levels and localization in affected tissues. In experimental systems, recombinant R-spondin-4 is used to stimulate stem cell proliferation and differentiation, emphasizing its relevance in tissue engineering and regenerative therapies.

Beyond development, R-spondin-4 has been implicated in tumorigenesis, particularly in cancers exhibiting aberrant Wnt signaling such as colorectal and gastric cancer. The RSPO4 antibody allows assessment of expression patterns in tumor samples and helps determine how altered RSPO4 activity contributes to cancer cell proliferation. In stem cell biology, this protein functions as a niche signal that maintains progenitor cell populations, making it a target of interest in organoid culture and tissue regeneration research.

The RSPO4 antibody is validated for western blotting, immunofluorescence, and immunohistochemistry. It yields strong staining of secreted and extracellular matrix-associated R-spondin-4. NSJ Bioreagents provides this antibody as a high-quality reagent for reproducible use in molecular, developmental, and cancer biology. By enabling detailed study of R-spondin-4 expression and signaling, the RSPO4 antibody supports discovery into Wnt pathway modulation and its implications for growth, regeneration, and disease.

Application Notes

Optimal dilution of the RSPO4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RSPO4 recombinant protein (Position: R60-K206) was used as the immunogen for the RSPO4 antibody.

Storage

After reconstitution, the RSPO4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.