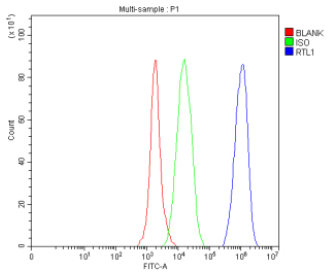
RTL1 Antibody / Retrotransposon like 1 (FY12279)

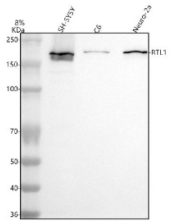
Catalog No.	Formulation	Size
FY12279	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

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	A6NKG5
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This RTL1 antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-RTL1 antibody. Overlay histogram showing SH-SY5Y 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-RTL1 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 RTL1 using anti-RTL1 antibody. Lane 1: human SH-SY5Y whole cell lysates, Lane 2: rat C6 whole cell lysates, Lane 3: 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-RTL1 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 band size for RTL1 is at 155 kDa.

Description

RTL1 antibody detects Retrotransposon-derived protein 1, encoded by the RTL1 gene on chromosome 14q32. RTL1 antibody is commonly used in research on placental biology, imprinting, and developmental regulation. RTL1, also known as PEG11 (paternally expressed gene 11), is an imprinted gene derived from a retrotransposon and plays essential roles in placental development, particularly in maintaining fetal capillary endothelial cells within the labyrinth layer of the placenta.

Structurally, RTL1 is a ~155 kDa protein with retroviral Gag and Pol-like domains, reflecting its origin from an ancient retrotransposon. Although lacking enzymatic retroviral activity, RTL1 retains structural features that support interactions with cellular machinery. Its expression is tightly regulated by imprinting, with only the paternal allele being active. RTL1 expression is restricted to placenta and certain fetal tissues, consistent with its developmental functions.

Functionally, RTL1 supports placental vascular development and fetal-maternal exchange. Knockout studies in mice reveal mid-gestation lethality due to defective placental capillaries. Overexpression, conversely, disrupts placental balance and fetal growth. RTL1 expression is regulated by antisense microRNAs encoded in the imprinted cluster, ensuring precise dosage. Researchers use RTL1 antibody to investigate placental biology, imprinting disorders, and retroelement-derived gene functions.

Clinically, altered RTL1 expression is associated with human imprinting disorders such as Kagami-Ogata syndrome and Temple syndrome, which involve abnormal dosage from the 14q32 region. Dysregulation of RTL1 may contribute to abnormal fetal growth and placental insufficiency. Its retrotransposon-derived nature highlights how ancient viral elements have been co-opted into mammalian development. NSJ Bioreagents provides RTL1 antibody for use in developmental biology and imprinting research.

Experimentally, RTL1 antibody is used in western blotting to detect the ~155 kDa protein, in immunohistochemistry to examine placental tissue, and in RNA-protein studies to assess regulatory interactions. It is a valuable tool for investigating imprinted gene expression and placental function.

Application Notes

Optimal dilution of the RTL1 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RTL1 recombinant protein (Position: H446-R1327) was used as the immunogen for the RTL1 antibody.

Storage

After reconstitution, the RTL1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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