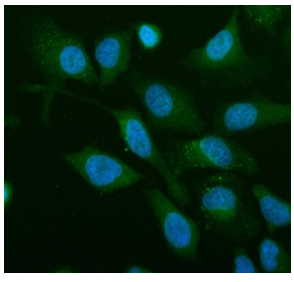
Renin receptor Antibody / ATP6AP2 (FY13351)

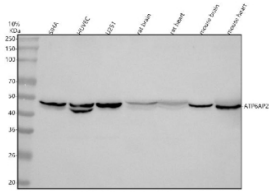
Catalog No.	Formulation	Size
FY13351	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

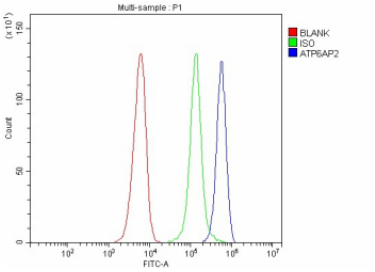
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O75787
Localization	Cytoplasm (ER, Lysosome)
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Immunoprecipitation : 2-4ug/500ug of lysate Flow Cytometry : 1-3ug/million cells
Limitations	This Renin receptor antibody is available for research use only.



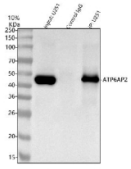
Immunofluorescent staining of Renin receptor/ATP6AP2 using anti-Renin receptor antibody (green). Renin receptor/ATP6AP2 was detected in an immunocytochemical section of human HeLa cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-Renin receptor antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of Renin receptor/ATP6AP2 using anti-Renin receptor antibody. Lane 1: human SiHa whole cell lysates, Lane 2: human HUVEC whole cell lysates, Lane 3: human U251 whole cell lysates, Lane 4: rat brain tissue lysates, Lane 5: rat heart tissue lysates, Lane 6: mouse brain tissue lysates, Lane 7: mouse heart 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-Renin receptor 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. A predominant band is detected at approximately 45-50 kDa in all samples, running above the predicted ~39 kDa mass but consistent with the apparent molecular weight of the heavily glycosylated full length receptor. Doublets likely reflect distinct glycosylation or processing states of ATP6AP2.



Flow Cytometry analysis of SiHa cells using anti-Renin receptor antibody. Overlay histogram showing SiHa 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-Renin receptor 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.



Immunoprecipitating Renin receptor/ATP6AP2 in U251 whole cell lysate. Western blot analysis of Renin receptor/ATP6AP2 using anti-Renin receptor antibody; Lane 1: U251 whole cell lysates (30ug); Lane 2: Rabbit control IgG instead of anti-Renin receptor antibody in U251 whole cell lysate; Lane 3: anti-Renin receptor antibody (2ug) + U251 whole cell lysate (500ug). After electrophoresis, proteins were transferred to a membrane. Then the membrane was incubated with rabbit anti-Renin receptor antibody at a dilution of 0.5 ug/ml and probed with a goat anti-rabbit IgG-HRP secondary antibody. The signal is developed using ECL Plus Western Blotting Substrate. A predominant band is detected at approximately 45-50 kDa in all samples, running above the predicted ~39 kDa mass but consistent with the apparent molecular weight of the heavily glycosylated full length receptor. Doublets likely reflect distinct glycosylation or processing states of ATP6AP2.

Description

Renin receptor antibody detects the (Pro)renin receptor, also known as ATP6AP2, a multifunctional membrane protein encoded by the ATP6AP2 gene on chromosome Xp11.4. ATP6AP2 serves dual roles as a receptor for renin and prorenin and as an accessory subunit of the vacuolar H+-ATPase (V-ATPase) complex. It is a type I transmembrane protein expressed in kidney, heart, brain, and vascular tissues, where it regulates blood pressure, renal physiology, and cellular acidification. ATP6AP2 plays crucial roles in the renin-angiotensin system (RAS) and lysosomal proton pump function.

Functionally, ATP6AP2 binds both renin and its precursor prorenin, enhancing angiotensin I generation and activating intracellular signaling pathways independent of angiotensin II. This binding promotes cell proliferation, fibrosis, and inflammation through ERK1/2 and MAPK activation. In the kidney, ATP6AP2 is localized to juxtaglomerular and distal tubular cells, where it regulates renin signaling and fluid balance. As a V-ATPase accessory subunit, it stabilizes proton pump assembly, contributing to lysosomal acidification and endosomal trafficking.

Structurally, ATP6AP2 contains an extracellular renin-binding domain, a single transmembrane segment, and a short cytoplasmic tail that mediates interactions with the V-ATPase complex. It is classified within the V-ATPase assembly

factor family, sharing homology with ATP6AP1. Co-localization studies show ATP6AP2 at the plasma membrane, endosomes, and lysosomes, reflecting its multifunctional localization and dual biological roles. Known interaction partners include renin, prorenin, and the V-ATPase V0 domain subunits.

ATP6AP2 is widely expressed in cardiovascular and neural tissues, with developmental expression detected in embryonic heart and brain, suggesting roles in organogenesis. In the central nervous system, ATP6AP2 modulates neuronal development, synaptic transmission, and autophagy regulation. Dysregulation of ATP6AP2 expression or mutation causes X-linked intellectual disability and Parkinsonism with spasticity (ATP6AP2-related disorder). In vascular smooth muscle and cardiac fibroblasts, ATP6AP2 signaling contributes to hypertension, cardiac hypertrophy, and fibrosis through MAPK and TGF-beta activation.

Clinically, elevated ATP6AP2 expression is associated with cardiovascular diseases, diabetic nephropathy, and tumor progression. It influences Wnt and Notch signaling pathways that regulate proliferation and differentiation. Pathway associations include renin-angiotensin signaling, proton transport via V-ATPase, and lysosomal degradation. Tissue-specific studies show high ATP6AP2 activity in renal epithelia and cardiomyocytes, coordinating hormonal and metabolic regulation.

Immunohistochemical staining using Renin receptor antibody reveals membrane and cytoplasmic localization in kidney and cardiac tissues. The Renin receptor antibody from NSJ Bioreagents is an excellent reagent for research into RAS signaling, proton pump function, and cardiovascular disease mechanisms.

Application Notes

Optimal dilution of the Renin receptor antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human Renin receptor/ATP6AP2 was used as the immunogen for the Renin receptor antibody.

Storage

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