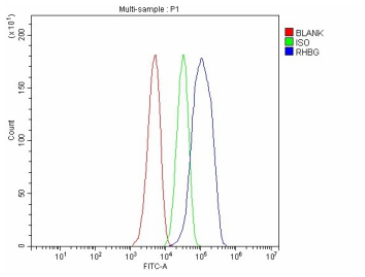
RHBG Antibody / Ammonium transporter Rh type B (FY12982)

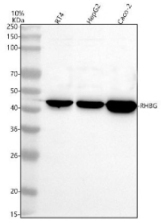
Catalog No.	Formulation	Size
FY12982	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

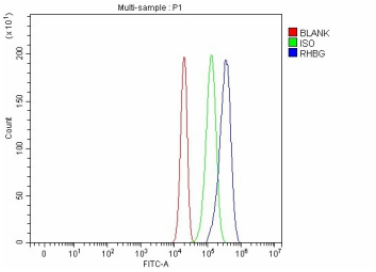
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9H310
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RHBG antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-RHBG antibody. Overlay histogram showing HepG2 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-RHBG 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 RHBG using anti-RHBG antibody. Lane 1: human RT4 whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human Caco-2 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-RHBG 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 single band is detected at ~40-43 kDa, running below the ~49 kDa prediction. The lower apparent mass is consistent with signal-peptide processing and the known faster SDS-PAGE migration of multi-pass membrane RH family transporters.



Flow Cytometry analysis of RT4 cells using anti-RHBG antibody. Overlay histogram showing RT4 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-RHBG 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.

Description

RHBG antibody detects Ammonium transporter Rh type B, a member of the Rhesus glycoprotein family that mediates ammonia and ammonium transport across cell membranes. The UniProt recommended name is Ammonium transporter Rh type B (RHBG). This protein functions as a bidirectional transporter of ammonia (NH3) and plays a crucial role in maintaining acid-base balance and nitrogen metabolism, particularly in the kidney and liver.

Functionally, RHBG antibody identifies a 458-amino-acid multi-pass transmembrane protein localized to the basolateral membrane of epithelial cells in renal collecting ducts and hepatocytes. RHBG facilitates the diffusion of ammonia across cell membranes, coupling nitrogen excretion with pH homeostasis. It functions as part of the ammonia recycling pathway that adjusts renal acid secretion according to metabolic conditions. RHBG complements the activity of the related transporter RHCG, which operates on the apical membrane of renal tubular cells to mediate ammonia excretion into urine.

The RHBG gene is located on chromosome 1q21.3 and encodes a protein containing 12 predicted transmembrane domains typical of ammonium transporters. Structural studies indicate that RHBG operates as a gas channel rather than an ion exchanger, selectively permeable to ammonia. Its expression is regulated by systemic acid-base status, hormonal control, and dietary nitrogen intake. In the liver, RHBG contributes to ammonia detoxification by facilitating its diffusion into hepatocytes for conversion to urea via the urea cycle.

Disruption of RHBG function leads to impaired ammonia transport and metabolic acidosis. Altered expression has been observed in chronic kidney disease and hepatic encephalopathy, conditions characterized by disordered nitrogen metabolism. In addition to its renal and hepatic roles, RHBG is expressed in brain, skin, and reproductive tissues, where it contributes to local pH and nitrogen regulation. Its regulation by hypoxia-inducible factors (HIFs) and glucocorticoids underscores its involvement in physiological adaptation to metabolic stress.

RHBG antibody is widely used in renal physiology, hepatology, and membrane transport research. It is suitable for immunoblotting, immunohistochemistry, and confocal microscopy to analyze RHBG expression and localization. In kidney research, this antibody helps distinguish basolateral ammonia transport from apical excretion mechanisms. Its detection supports studies on acid-base homeostasis, ammonia metabolism, and renal tubular function. RHBG also serves as a biomarker for nitrogen-handling capacity in metabolic and toxicological studies.

Structurally, RHBG belongs to the Amt/Mep/Rh superfamily of ammonia transporters. It forms homotrimers in the membrane, each subunit containing a hydrophobic pore that selectively channels ammonia. Post-translational modifications such as glycosylation influence its membrane stability and transport efficiency. NSJ Bioreagents provides RHBG antibody reagents validated for research in ammonia transport, renal physiology, and metabolic regulation.

Application Notes

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

Immunogen

E.coli-derived human RHBG recombinant protein (Position: R7-L394) was used as the immunogen for the RHBG antibody.

Storage

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