abcam

ab213653

Anti-SLC12A1/NKCC2 antibody [EPR11842] - BSA and Azide free

Recombinant RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR11842
Purification technique	Affinity purification Protein A
Specificity	The homology between SLC12A1/NKCC2 and SLC12A2 is 67%, so ab213653 may cross react with SLC12A2. We have not performed any laboratory testing to validate this.

Reactivity data

IP

Not recommended

Species	Human
Dilution info	-

Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information SLC12A1

Function	Renal sodium, potassium and chloride non-electrogenic ion symporter that mediates the transepithelial NaCl reabsorption in the thick ascending limb and plays an essential role in the urinary concentration and volume regulation (PubMed:21321328). It can substitute NH4(+) for K(+), enabling NH4(+) apical transmembrane transport in the medullary thick ascending limb (MTAL). This function is crucial for maintaining ammonium homeostasis by the kidney, particularly during metabolic acidosis (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab213653 is the carrier-free version of ab171747.

Patented technology

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready

Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility

This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The SLC12A1 protein also known as the NKCC2 transporter is an important player in ion transport within renal physiology. With a molecular weight of around 120 kDa NKCC2 functions in the reabsorption of sodium potassium and chloride ions a function facilitated by its location in the thick ascending limb of the loop of Henle in the kidneys. This location and functionality are critical for renal concentration mechanisms and contribute to the maintenance of electrolyte and fluid balance.
Biological function summary	This transporter plays an essential role in concentrating urine and regulating blood pressure. NKCC2 is a part of the larger solute carrier family and does not usually form complexes with other proteins. It facilitates the trans-epithelial movement of Na+ K+ and 2Cl- ions from the lumen into renal epithelial cells which is fundamental for the creation of an osmotic gradient essential for water reabsorption.
Pathways	The SLC12A1 protein is a significant component of renal electrolyte transport and blood pressure regulation pathways. It is intricately involved in the renin-angiotensin-aldosterone system (RAAS) which regulates blood volume and systemic vascular resistance. In these pathways NKCC2's activity tightly connects it to other ion channel proteins and transporters such as ENaC which also play roles in blood pressure regulation by influencing sodium handling in the nephron.
Associated diseases and disorders	Dysregulation of NKCC2 function can result in Bartter syndrome and hypertension. Bartter syndrome a rare disorder characterized by salt wasting and electrolyte imbalances stems from mutations affecting NKCC2. This transporter also impacts hypertension where its dysregulation can alter sodium reabsorption processes linking it to other proteins involved in blood pressure control such as the mineralocorticoid receptor. Understanding the role of NKCC2 provides insight into potential therapeutic targets for these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

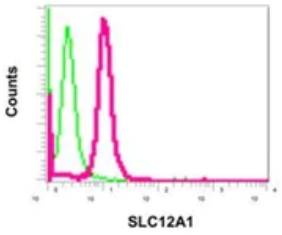
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

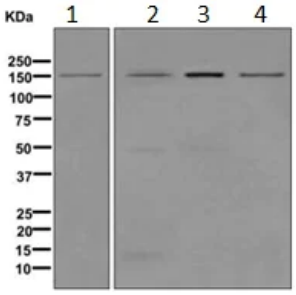
2 product images



Flow Cytometry (Intracellular) - Anti-SLC12A1/NKCC2 antibody [EPR11842] - BSA and Azide free (ab213653)

SLC12A1/NKCC2 Flow Cytometry (Intracellular) staining using rabbit Anti-SLC12A1/NKCC2 antibody

This data was developed using ab171747, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of permeabilized K562 cells labeling SLC12A1/NKCC2 with ab171747 at 1/100 dilution (red), compared with a rabbit IgG (negative) (green).



Western blot - Anti-SLC12A1/NKCC2 antibody [EPR11842] - BSA and Azide free (ab213653)

SLC12A1/NKCC2 Western blot staining using rabbit Anti-SLC12A1/NKCC2 antibody

This data was developed using ab171747, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-SLC12A1/NKCC2 antibody [EPR11842] (ab171747) at 1/1000 dilution

Lane 1:
293T cell lysates at 10 µg

Lane 2:
Human fetal kidney lysates at 10 µg

Lane 3:
K562 cell lysates at 10 µg

Lane 4:
WI-38 cell lysate at 10 µg

Predicted band size: 121 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.