

# Anti-SLC12A2 / NKCC1 Antibody [PSH23-65] - BSA and Azide free

## HA751906



<b>Product Type:</b>	Recombinant Rabbit monoclonal IgG, primary antibodies
<b>Species reactivity:</b>	Human, Mouse, Rat
<b>Applications:</b>	WB, IF-Cell, IHC-Fr, IHC-P, FC, IP
<b>Molecular Wt:</b>	Predicted band size: 131 kDa
<b>Clone number:</b>	PSH23-65

**Description:** The Na-K-Cl cotransporter (NKCC) is a transport protein that aids in the secondary active transport of sodium, potassium, and chloride into cells. In humans there are two isoforms of this membrane transport protein, NKCC1 and NKCC2, encoded by two different genes (SLC12A2 and SLC12A1 respectively). Two isoforms of the NKCC1/Slc12a2 gene result from keeping (isoform 1) or skipping (isoform 2) exon 21 in the final gene product. NKCC1 is widely distributed throughout the human body; it has important functions in organs that secrete fluids. In contrast, NKCC2 is found specifically in the kidney, where it extracts sodium, potassium, and chloride from the urine so they can be reabsorbed into the blood.

**Immunogen:** Recombinant protein within mouse SLC12A2 / NKCC1 aa 101-279.

**Positive control:** COLO205 (Human colon adenocarcinoma cells) cell lysate, HT-29 (Human colorectal adenocarcinoma cells) cell lysate, HeLa (Human cervical adenocarcinoma cells) cell lysate, NIH/3T3 (Mouse fibroblasts) cell lysate, Mouse cerebellum tissue lysate, Mouse brain tissue lysate, Mouse colon tissue lysate, Mouse small intestine tissue lysate, Rat cerebellum tissue lysate, Rat brain tissue lysate.

**Subcellular location:** Basolateral cell membrane.

**Database links:** SwissProt: P55011 Human | P55012 Mouse  
Entrez Gene: 83629 Rat

### Recommended Dilutions:

<b>WB</b>	1:5,000
<b>IF-Cell</b>	1:500
<b>IHC-Fr</b>	1:500
<b>IHC-P</b>	1:5,000
<b>FC</b>	1:1,000
<b>IP</b>	1-2µg/sample

**Storage Buffer:** PBS (pH7.4).

**Storage Instruction:** Store at +4°C after thawing. Aliquot store at -20°C. Avoid repeated freeze / thaw cycles.

**Purity:** Protein A affinity purified.

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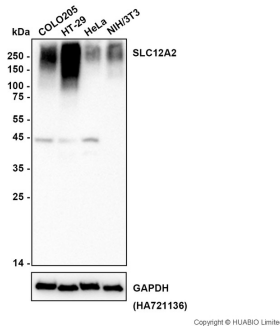
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## Images



**Fig1:** Western blot analysis of SLC12A2 / NKCC1 on different lysates with Rabbit anti-SLC12A2 / NKCC1 antibody (HA751906) at 1/5,000 dilution.

Lane 1: COLO205 (Human colon adenocarcinoma cells) cell lysate  
Lane 2: HT-29 (Human colorectal adenocarcinoma cells) cell lysate

Lane 3: HeLa (Human cervical adenocarcinoma cells) cell lysate  
Lane 4: NIH/3T3 (Mouse fibroblasts) cell lysate

Lysates/proteins at 20 µg/Lane.

Exposure time: 20 seconds; ECL: K1801

Blocking: 5% NFDm/TBST, 1 hour at room temperature

Primary antibody: HA751906, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C

Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDm/TBST, 1 hour at room temperature

Predicted band size: 131 kDa

Observed band size: 150-200 kDa

**Fig2:** Western blot analysis of SLC12A2 / NKCC1 on different lysates with Rabbit anti-SLC12A2 / NKCC1 antibody (HA751906) at 1/5,000 dilution.

Lane 1: Mouse cerebellum tissue lysate

Lane 2: Mouse brain tissue lysate

Lane 3: Mouse liver tissue lysate

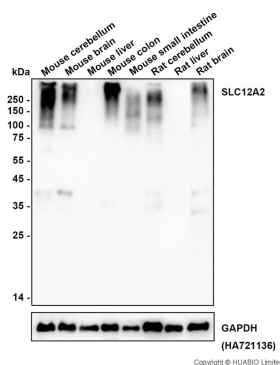
Lane 4: Mouse colon tissue lysate

Lane 5: Mouse small intestine tissue lysate

Lane 6: Rat cerebellum tissue lysate

Lane 7: Rat liver tissue lysate

Lane 8: Rat brain tissue lysate



Lysates/proteins at 20 µg/Lane.

Exposure time: 20 seconds; ECL: K1801

Low expression: Liver (PMID:12000719)

Blocking: 5% NFDm/TBST, 1 hour at room temperature

Primary antibody: HA751906, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C

Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDm/TBST, 1 hour at room temperature

Predicted band size: 131 kDa

Observed band size: 150-200 kDa

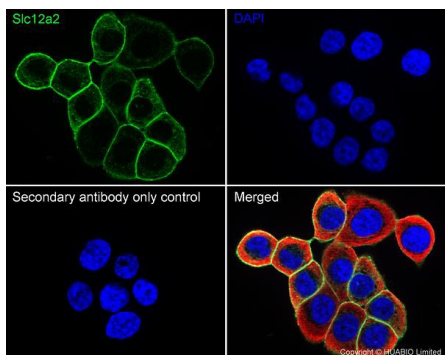
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**Fig3:** Application: Immunocytochemistry (IF-cell)

Species: Human

Sample: HT-29 (Human colorectal adenocarcinoma cells)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.

Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.

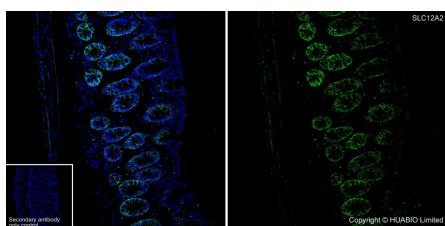
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.

Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA751906, 1/500, overnight at 4°C.

Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 45 minutes at room temperature.

Counterstain: Beta tubulin (HA601187, red), 1/100, overnight at 4°C. The Nuclear counterstain was DAPI (Blue).



**Fig4:** Application: Immunofluorescence (IHC-Fr)

Species: Mouse

Tissue: Colon

Sample: Frozen section

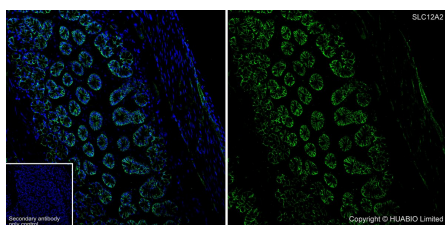
Antigen retrieval: Not required

Wash buffer: 1× TBST

Blocking: 10% normal goat serum + 0.5 % Triton X-100 + 0.3 M Glycine in PBS, 10 minutes at room temperature.

Primary antibody: HA751906, 1/500, overnight at 4°C.

Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 1.5 hours at room temperature.



**Fig5:** Application: Immunofluorescence (IHC-Fr)

Species: Rat

Tissue: Colon

Sample: Frozen section

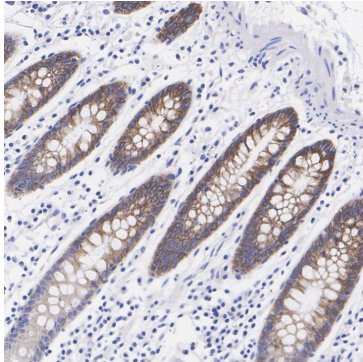
Antigen retrieval: Not required

Wash buffer: 1× TBST

Blocking: 10% normal goat serum + 0.5 % Triton X-100 + 0.3 M Glycine in PBS, 10 minutes at room temperature.

Primary antibody: HA751906, 1/500, overnight at 4°C.

Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 1.5 hours at room temperature.



**Fig6:** Application: Immunohistochemistry (IHC-P)

Species: Human

Tissue: Colon

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

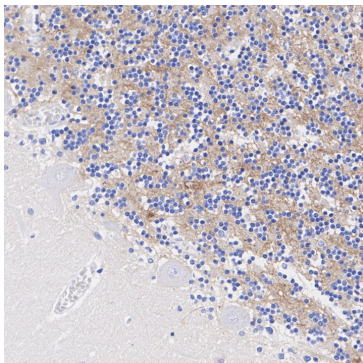
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.



**Fig7:** Application: Immunohistochemistry (IHC-P)

Species: Human

Tissue: Cerebellum

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

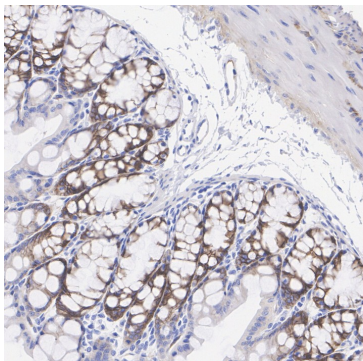
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.



**Fig8:** Application: Immunohistochemistry (IHC-P)

Species: Mouse

Tissue: Colon

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

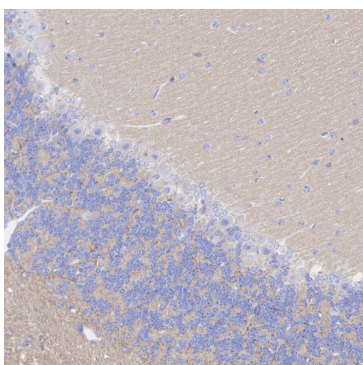
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.



**Fig9:** Application: Immunohistochemistry (IHC-P)

Species: Mouse

Tissue: Cerebellum

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

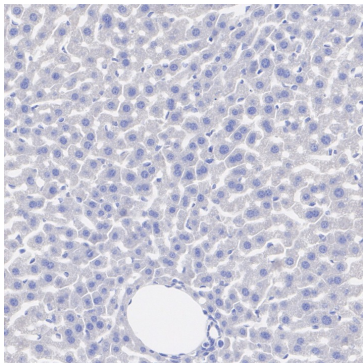
Secondary antibody: HA1119, 20 minutes at room temperature.

**Fig10:** Application: Immunohistochemistry (IHC-P)

Species: Mouse

Tissue: Liver

Sample: Paraffin-embedded section



Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.

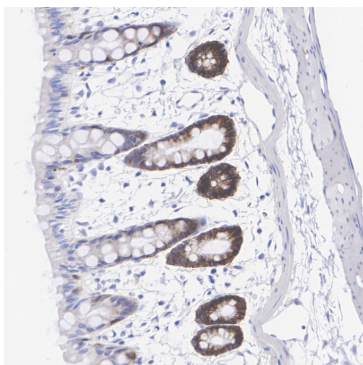
Negative expression of SLC12A2 / NKCC1 protein in liver is consistent with the predicted expression pattern.

**Fig11:** Application: Immunohistochemistry (IHC-P)

Species: Rat

Tissue: Colon

Sample: Paraffin-embedded section



Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

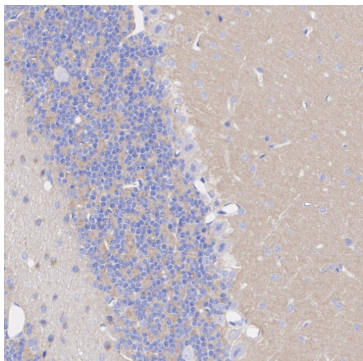
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.



**Fig12:** Application: Immunohistochemistry (IHC-P)

Species: Rat

Tissue: Cerebellum

Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

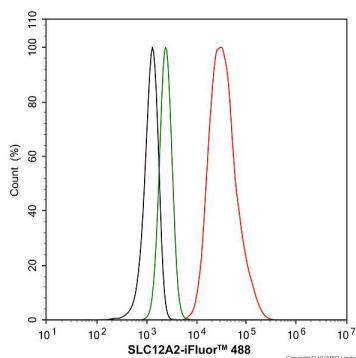
Wash buffer: 1× TBST

Endogenous peroxidase blocking: 3% H<sub>2</sub>O<sub>2</sub>, 10 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.

Primary antibody: HA751906, 1/5,000, 1 hour at room temperature.

Secondary antibody: HA1119, 20 minutes at room temperature.



**Fig13:** Application: Flow Cytometry (Intra)

Species: Human

Sample: HT-29 (Human colorectal adenocarcinoma cells)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.

Permeabilization: 1x Permeabilization Buffer (eBioscience), 15 minutes at room temperature.

Blocking: 1% BSA + 10% normal goat serum, 15 minutes at room temperature.

Antibody dilution buffer: 1x PBS.

Primary antibody: HA751906 (1/1,000) (Red) compared with Rabbit IgG Isotype Control (HA722127, Green), 15 minutes at room temperature.

Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 15 minutes at room temperature.

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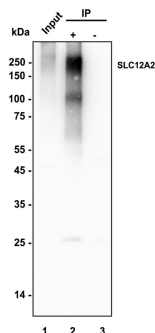
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**Fig14: Immunoprecipitation (IP)**

SLC12A2 / NKCC1 was immunoprecipitated in 0.2 mg COLO205 (Human colon adenocarcinoma cells) cell lysate with HA751906 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using HA751906 at 1/5,000 dilution. Anti-Rabbit IgG for IP Nano-secondary antibody (NBI01H) at 1/5,000 dilution was used for 1 hour at room temperature.



Lane 1: COLO205 cell lysate (input)

Lane 2: HA751906 IP in COLO205 cell lysate

Lane 3: Rabbit IgG instead of HA751906 in COLO205 cell lysate

Exposure time: 7 seconds

Blocking: 5% NFDM/TBST, 1 hour at room temperature

Primary dilution: HA751906, 1/5,000 in primary antibody dilution buffer (K1803), 2 hours at room temperature

Predicted band size: 131 kDa

Observed band size: 150-200 kDa

**Note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

### Background References

1. Zhou J et al. Exosome-derived SLC12A2-DT promotes macrophage M2 polarization-mediated hepatocellular carcinoma progression. *Int Immunopharmacol.* 2025 Jul
2. Delpire E et al. NKCC1 in human diseases: is the SLC12A2 gene haploinsufficient? *Am J Physiol Cell Physiol.* 2023 Aug

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