abcam

ab210404

Anti-RCN1/RCN antibody [EPR17163-117]

Recombinant | RabMAb | KO Validated

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR17163-117
Purification technique	Affinity purification Protein A
Concentration	0.734 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/700
Notes	-

Species	Human
Dilution info	1/700
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000

Notes	-

Target data

See full target information RCN1

Function	May regulate calcium-dependent activities in the endoplasmic reticulum lumen or post-ER compartment.

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

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.

Supplementary info

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

Activity summary	RCN1 also known as reticulocalbin-1 or RCN is a calcium-binding protein located in the lumen of the endoplasmic reticulum (ER). It belongs to the CREC family of proteins which are characterized by their EF-hand motifs that mediate calcium binding. RCN1 has a molecular mass of around 37 kDa. This protein is expressed in various tissues including the pancreas heart and brain suggesting its involvement in diverse cellular functions. Within the ER RCN1 interacts with other proteins aiding in their proper folding and assembly.
Biological function summary	RCN1 plays a role in cellular calcium homeostasis and may influence processes such as protein folding and trafficking. It is not known to be a part of a larger complex but it interacts with other ER-resident proteins. Maintaining calcium levels is important within the ER where RCN1 helps buffer calcium concentrations. This function supports processes that are sensitive to calcium fluctuations such as signal transduction and stress responses.
Pathways	The role of RCN1 in cellular mechanisms connects it to important pathways like the calcium signaling pathway and the unfolded protein response pathway. In the calcium signaling pathway RCN1 aids in regulating calcium levels within the ER affecting downstream signaling events. Meanwhile in the unfolded protein response pathway RCN1 participates by ensuring the proper folding of proteins particularly during times of stress when misfolded proteins accumulate. RCN1's interaction with calumenin another calcium-binding protein highlights its involvement in these pathways.
Associated diseases and disorders	RCN1 has associations with cardiovascular disease and some forms of cancer. In cardiovascular disease altered expression of RCN1 may impact calcium signaling and lead to dysfunction in heart cells. Similarly in certain cancers changes in RCN1 expression levels could affect cellular proliferation via calcium-regulated pathways. The interaction between RCN1 and calreticulin a multifunctional protein involved in calcium homeostasis and immune response further connects RCN1's influence on disease progression.

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

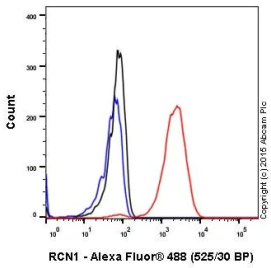
We do not recommend this combination. It is not covered by our product promise.

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.

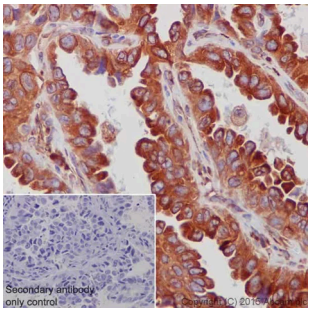
14 product images



Flow Cytometry (Intracellular) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Flow Cytometry (Intracellular) staining using rabbit Anti-RCN1/RCN antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells labeling RCN1/RCNwith ab210404 at 1/700 dilution (red) compared with a Rabbit IgG,monoclonal[EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.
Cells were permeabilised with 90% methanol (diluted with 1X PBS).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

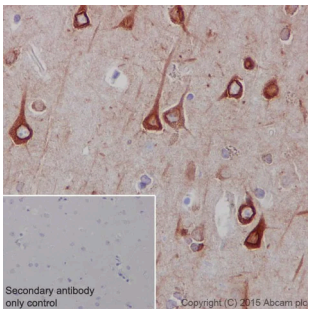
RCN1/RCN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RCN1/RCN antibody

Immunohistochemical analysis of paraffin-embedded Human lung adenocarcinoma tissue labeling RCN1/RCN with ab210404 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Cytoplasm staining on tumor cells of Human lung adenocarcinoma is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is ab97051 at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

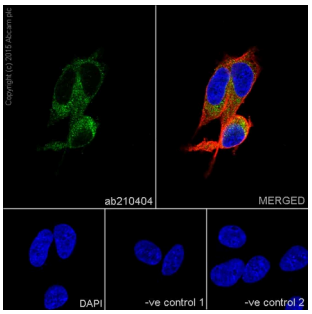
RCN1/RCN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RCN1/RCN antibody

Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling RCN1/RCN with ab210404 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Cytoplasm staining on neurons of Human cerebrum is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is ab97051 at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RCN1/RCN antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells labeling RCN1/RCN with ab210404 at 1/500 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining on SH-SY5Y cell line.

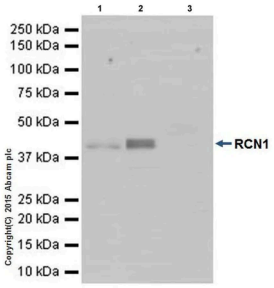
The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab210404 at 1/500 dilution followed by ab150120 at 1/1000 dilution.

-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Immunoprecipitation - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN was immunoprecipitated from 1mg of 293T (Human epithelial cell line from embryonic kidney) whole cell lysate with ab210404 at 1/50 dilution.
Western blot was performed from the immunoprecipitate using ab210404 at 1/1000 dilution.

VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.

Lane 1: 293T whole cell lysate, 10µg (Input).

Lane 2: ab210404 IP in 293T whole cell lysate.

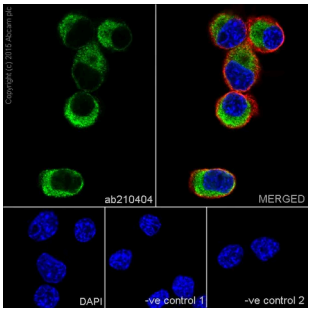
Lane 3: Rabbit IgG,monoclonal [EPR25A] - Isotype Control (ab172730) instead of ab210404 in 293T whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 1 second.

All lanes:
Immunoprecipitation - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

Predicted band size: 39 kDa



Immunocytochemistry/ Immunofluorescence - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RCN1/RCN antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized Neuro-2a (Mouse neuroblastoma cell line) cells labeling RCN1/RCN with ab210404 at 1/500 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining on Neuro-2a cell line.

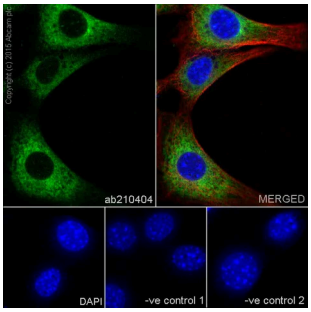
The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab210404 at 1/500 dilution followed by ab150120 at 1/1000 dilution.

-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-RCN1/RCN antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling RCN1/RCN with ab210404 at 1/500 dilution followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining on NIH/3T3 cell line.

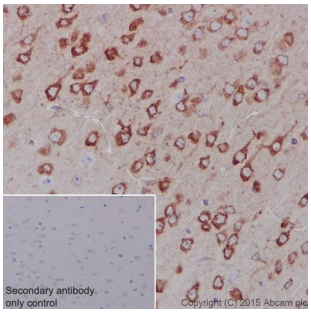
The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) at 1/1000 dilution and Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) preadsorbed (ab150120) at 1/1000 dilution (red).

The negative controls are as follows:-

-ve control 1: ab210404 at 1/500 dilution followed by ab150120 at 1/1000 dilution.

-ve control 2: ab7291 at 1/1000 dilution followed by ab150077 at 1/1000 dilution.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

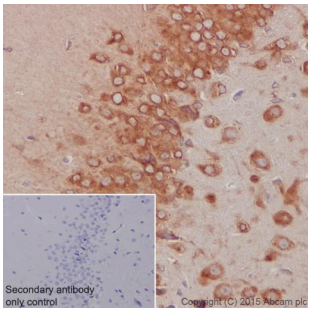
RCN1/RCN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RCN1/RCN antibody

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling RCN1/RCN with ab210404 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Cytoplasm staining on neurons of mouse cerebral cortex is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is ab97051 at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

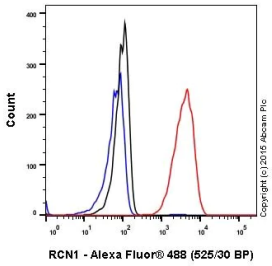
RCN1/RCN Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-RCN1/RCN antibody

Immunohistochemical analysis of paraffin-embedded Rat hippocampus tissue labeling RCN1/RCN with ab210404 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Cytoplasm staining on neurons of rat hippocampus is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is ab97051 at 1/500 dilution.

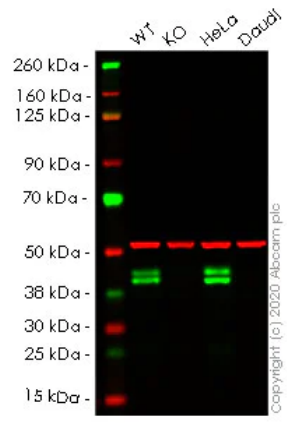
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Flow Cytometry (Intracellular) - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Flow Cytometry (Intracellular) staining using rabbit Anti-RCN1/RCN antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed NIH/3T3 (Mouse embryonic fibroblast cell line) cells labeling RCN1/RCNwith ab210404 at 1/700 dilution (red) compared with a Rabbit IgG,monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/500 dilution was used as the secondary antibody.
Cells were permeabilised with 90% methanol (diluted with 1X PBS).



Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

Lanes 1- 4: Merged signal (red and green). Green - ab210404 observed at 45 kDa. Red - Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) observed at 50 kDa.
ab210404 was shown to react with RCN1 in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab266098 (knockout cell lysate ab258172) was used. Wild-type HEK-293T and RCN1 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab210404 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) overnight at 4°C at a 1 in 2000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404) at 1/2000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

Lane 2:
RCN1 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human RCN1 (RCN) knockout HEK-293T cell line (ab266098)

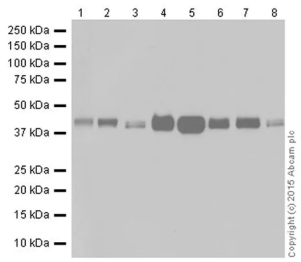
Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
Daudi cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 39 kDa

Observed band size: 45 kDa



Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Western blot staining using rabbit Anti-RCN1/RCN antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 8416973).

All lanes:
Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404) at 1/5000 dilution

Lane 1:
Human placenta lysate at 20 µg

Lane 2:
Human fetal kidney lysate at 20 µg

Lane 3:
HEK-293 (Human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

Lane 4:
SH-SY5Y (Human neuroblastoma cell line from bone marrow) whole cell lysate at 20 µg

Lane 5:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 6:
E14 mouse embryo lysate at 20 µg

Lane 7:
E14 rat embryo lysate at 20 µg

Lane 8:
Neuro-2a (Mouse neuroblastoma cell line) whole cell lysate at 20 µg

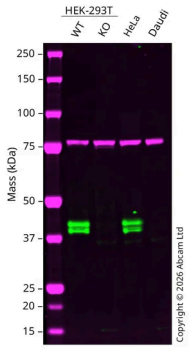
Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/100000 dilution

Predicted band size: 39 kDa

Observed band size: 44 kDa, 46 kDa

Exposure time: 30s



Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

RCN1/RCN Western blot staining using rabbit Anti-RCN1/RCN antibody

Western blot: Anti-RCN1/RCN antibody [EPR17163-117] ab210404 staining at 1/2000 dilution, shown in green; Mouse anti-CANX ab238078 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 45 kDa in Wild-type HEK-293T cell lysates with no signal observed at this size in RCN1 knockout HEK-293T cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.

All lanes:
Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404) at 1/2000 dilution

Lane 1:
Wild-type HEK-293T cell lysates at 20 µg

Lane 2:
Western blot - Human RCN1 (RCN) knockout HEK-293T cell line (ab266098) at 20 µg

Lane 3:
HeLa cell lysates at 20 µg

Lane 4:
Daudi cell lysates at 20 µg

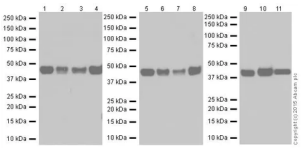
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 45 kDa

Observed band size: 45 kDa



Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404)

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1-8: 1 minute; Lane 9,10 and 11: 10 seconds.

All lanes:
Western blot - Anti-RCN1/RCN antibody [EPR17163-117] (ab210404) at 1/2000 dilution

Lane 1:
Mouse brain lysate at 10 µg

Lane 2:
Mouse heart lysate at 10 µg

Lane 3:
Mouse kidney lysate at 10 µg

Lane 4:
Mouse spleen lysate at 10 µg

Lane 5:
Rat brain lysate at 10 µg

Lane 6:
Rat heart lysate at 10 µg

Lane 7:
Rat kidney lysate at 10 µg

Lane 8:
Rat spleen lysate at 10 µg

Lane 9:
C6 (Rat glial tumor cell line) whole cell lysate at 10 µg

Lane 10:

PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Lane 11:
NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/100000 dilution

Predicted band size: 39 kDa

Observed band size: 44 kDa, 46 kDa

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