abcam

ab46798

Anti-Hsp60 antibody - Mitochondrial Marker

Anti-Hsp60 antibody (ab46798) is a rabbit polyclonal antibody detecting Hsp60 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Pig, Rat**.

- Over 130 publications
- Trusted since 2007

Lab Essentials

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Polyclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Purification technique	Affinity purification Immunogen
Specificity	Replenishment batches of our polyclonal antibody, ab46798 are tested in WB. Previous batches were additionally validated in Flow Cyt, ICC/IF, IHC-P and IP. These applications are still expected to work and are covered by our Abpromise guarantee. You may also be interested in our alternative recombinant antibody, ab190828.
Concentration	0.9 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/40
Notes	-

Expected

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

Predicted

Species	Chicken, Hamster, Cow, Orangutan
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30
Notes	ab171870 - Rabbit polyclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Predicted

Species	Chicken, Hamster, Cow, Orangutan
Dilution info	-

Notes	-

WB

Tested

Species	Mouse
Dilution info	1/20000
Notes	-

Species	Pig
Dilution info	1/20000
Notes	-

Species	Human
Dilution info	1/20000
Notes	-

Expected

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

Predicted

Species	Chicken, Hamster, Cow, Orangutan
Dilution info	-
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100

Notes	-

Species	Rat
Dilution info	1/100
Notes	-

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Predicted

Species	Chicken, Hamster, Cow, Orangutan
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	5-10 µg/mL
Notes	-

Expected

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

Predicted

Species	Chicken, Hamster, Cow, Orangutan
Dilution info	-
Notes	-

Target data

See full target information HSPD1

Function	Chaperonin implicated in mitochondrial protein import and macromolecular assembly. Together with Hsp10, facilitates the correct folding of imported proteins. May also prevent misfolding and promote the refolding and proper assembly of unfolded polypeptides generated under stress conditions in the mitochondrial matrix (PubMed:11422376, PubMed:1346131). The functional units of these chaperonins consist of heptameric rings of the large subunit Hsp60, which function as a back-to-back double ring. In a cyclic reaction, Hsp60 ring complexes bind one unfolded substrate protein per ring, followed by the binding of ATP and association with 2 heptameric rings of the co-chaperonin Hsp10. This leads to sequestration of the substrate protein in the inner cavity of Hsp60 where, for a certain period of time, it can fold undisturbed by other cell components. Synchronous hydrolysis of ATP in all Hsp60 subunits results in the dissociation of the chaperonin rings and the release of ADP and the folded substrate protein (Probable).

Storage

Shipped at conditions	Blue Ice
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

What is this antibody validated in?
Anti-Hsp60 antibody (ab46798) is a rabbit polyclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Pig, Rat samples.

What is the molecular weight of Hsp60?
Anti-Hsp60 (ab46798) specifically detects a band for Hsp60 (UniProt: P10809) at a molecular weight of 60kDa.

Trusted by the scientific community
Anti-Hsp60 (ab46798) was first used in a scientific publication in 2007 and has been cited over 130 times in peer-reviewed journals.

Reviewed by scientists
Anti-Hsp60 (ab46798) has over 10 independent reviews from customers.

Supplementary info

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

Activity summary	Hsp60 also known as HSPD1 and heat shock protein 60 is a significant chaperonin with a molecular weight of approximately 60 kDa. It resides predominantly in the mitochondria and functions to assist in the proper folding of proteins preventing their aggregation. Hsp60 is expressed mainly in cells with high metabolic activity. Its presence as a mitochondrial marker highlights its essential role in maintaining cellular homeostasis and function.
Biological function summary	The protein ensures mitochondrial protein stability by facilitating the refolding of misfolded proteins and cooperating with other chaperonins like Hsp10. Hsp60 participates in forming a complex with these proteins to create a conducive environment for protein folding. It plays a part in regulating mitochondrial homeostasis impacting cell survival and apoptosis processes.
Pathways	Hsp60 links to the ATP synthesis and apoptosis pathways showcasing its importance as a mitochondrial marker. It interacts with proteins like caspase-3 to modulate cell death mechanisms highlighting its influence beyond simple protein folding. In the ATP synthesis pathway it contributes indirectly to energy production by maintaining mitochondrial function.
Associated diseases and disorders	Hsp60 shows a connection to neurodegenerative diseases and cancer. Altered Hsp60 levels correlate with increased apoptosis in neurodegenerative conditions like Alzheimer's disease. Additionally in cancer interactions with proteins such as AKT suggest its potential role in cell proliferation and survival. Understanding its role could aid in the development of therapeutic interventions targeting mitochondrial dysfunction.

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.

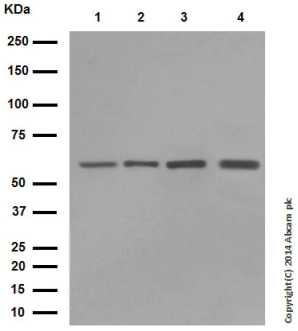
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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16 product images



Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Western blot staining using rabbit Anti-Hsp60 antibody

Blocking Buffer: 5% NFDM/TBST
Dilution Buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798) at 1/20000 dilution

Lane 1:
Mouse brain tissue lysate at 20 µg

Lane 2:
Mouse heart tissue lysate at 20 µg

Lane 3:
Mouse spleen tissue lysate at 20 µg

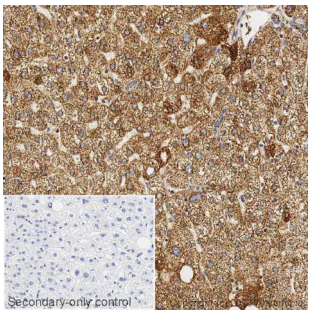
Lane 4:
Rat heart tissue lysate at 10 µg

Secondary

All lanes:
HRP conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 61 kDa

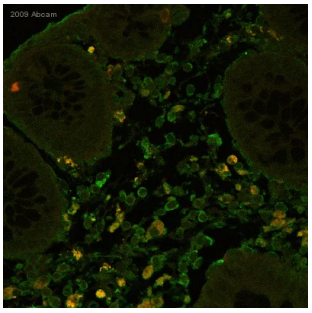
Observed band size: 60 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human liver using rabbit Anti-Hsp60 antibody

IHC image of Hsp60 staining in a section of formalin-fixed paraffin-embedded normal human liver* performed on a Leica Biosystems BOND® RX instrument. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab46798, 1ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody. For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times. *Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

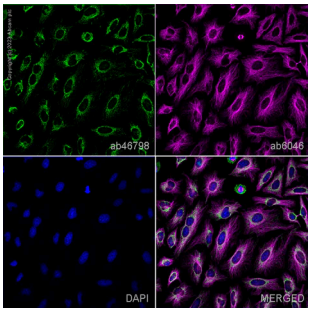


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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

Unpurified ab46798 staining Hsp60 from human colon tissue by immunohistochemistry (formalin/PFA-fixed paraffin-embedded sections). Cells were formaldehyde fixed prior to blocking in 10% serum for 2 hours at 21°C. The primary antibody was diluted 1/500 and incubated with the sample for 2 hours at 21°C. Alexa fluor® 594 goat polyclonal, diluted 1/5000, was used as the secondary.



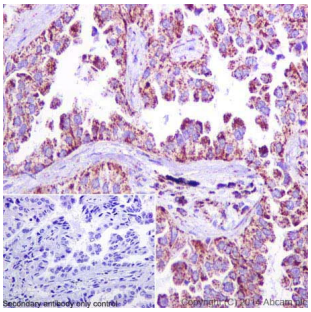
Immunocytochemistry/ Immunofluorescence - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunocytochemistry/ Immunofluorescence staining of HeLa cells using rabbit Anti-Hsp60 antibody

ab46798 staining Hsp60 in HeLa cells. The cells were fixed with 100% methanol (5 min), permeabilized with 0.1% PBS-Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1%PBS-Tween for 1h. The cells were then incubated overnight at 4°C with ab46798 at 1µg/ml and ab7291, Mouse monoclonal [DM1A] to alpha Tubulin - Loading Control. Cells were then incubated with ab150081, Goat polyclonal Secondary Antibody to Rabbit IgG - H&L (Alexa Fluor® 488), pre-adsorbed at 1/1000 dilution (shown in green) and ab150120, Goat polyclonal Secondary Antibody to Mouse IgG - H&L (Alexa Fluor® 594), pre-adsorbed at 1/1000 dilution (shown in pseudocolour magenta). Nuclear DNA was labelled with DAPI (shown in blue).

Also suitable in cells fixed with 4% paraformaldehyde (10 min).

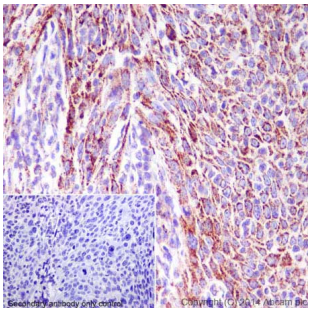
Image was acquired with a high-content analyser (Operetta CLS, Perkin Elmer) and a maximum intensity projection of confocal sections is shown.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

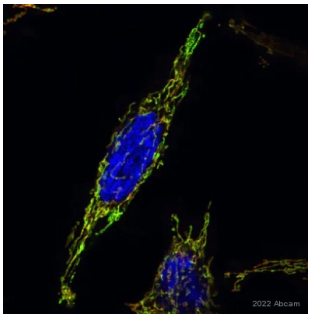
Immunohistochemical staining of paraffin embedded human lung adenocarcinoma with purified ab46798 at a working dilution of 1 in 100. The secondary antibody used is ab97051 Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

Immunohistochemical staining of paraffin embedded human cervical carcinoma with purified ab46798 at a working dilution of 1 in 100. The secondary antibody used is ab97051 Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.

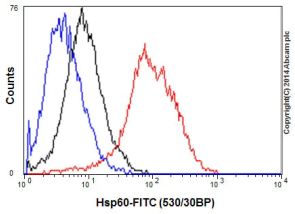


This image is courtesy of a customer review submitted by Suleyman Bozkurt

Immunocytochemistry - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunocytochemistry staining of HeLa FlipIn Cell line using rabbit Anti-Hsp60 antibody

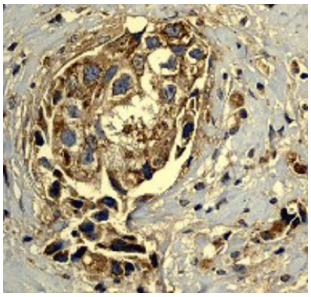
Immunocytochemistry analysis of paraformaldehyde-fixed 0.3% Triton X permeabilized HeLa FlipIn Cell line staining with ab46798 at 1/200 dilution. Secondary antibody was Alexa fluor™ 488 goat anti-rabbit IgG H+L at 1/700 dilution. Samples were incubated with the primary antibody with blocking buffer (5% FBS in PBS) for 2 hours at 24°C. Blocking was done using 5% serum for 1 hour at 24°C.



Flow Cytometry (Intracellular) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Flow Cytometry (Intracellular) staining using rabbit Anti-Hsp60 antibody

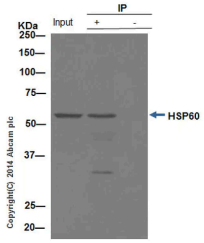
Overlay histogram showing HeLa cells fixed in 2% PFA and stained with purified ab46798 at a dilution of 1 in 150 (red line). The secondary antibody used was FITC goat anti-rabbit at a dilution of 1 in 150. Rabbit monoclonal IgG was used as an isotype control (black) and cells without incubation with the antibody were used as a negative control (blue line).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

Immunohistochemical analysis of paraffin-embedded human breast adenocarcinoma using unpurified ab46798 at 1/250 dilution.



Immunoprecipitation - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

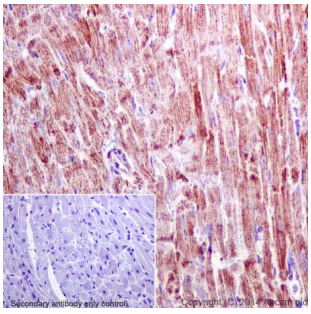
ab46798 (purified) at 1/40 immunoprecipitating Hsp60 in MCF7 (Lane 1). Lane 2 - PBS. For western blotting, a HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG was used as the secondary antibody (1/1500).
Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM /TBST.

All lanes:
Immunoprecipitation - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Predicted band size: 61 kDa

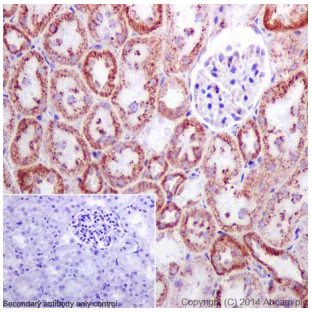
Observed band size: 60 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

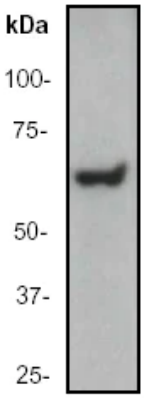
Immunohistochemical staining of paraffin embedded mouse cardiac muscle with purified ab46798 at a working dilution of 1 in 100. The secondary antibody used is ab97051 Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Hsp60 antibody

Immunohistochemical staining of paraffin embedded rat kidney with purified ab46798 at a working dilution of 1 in 100. The secondary antibody used is ab97051 Goat Anti-Rabbit IgG H&L (HRP) at a dilution of 1/500. The sample is counter-stained with hematoxylin. Antigen retrieval was perfomed using Tris-EDTA buffer, pH 9.0. PBS was used instead of the primary antibody as the negative control, and is shown in the inset.



Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Western blot staining of T-47D whole cell lysate using rabbit Anti-Hsp60 antibody

Secondary antibody - anti-rabbit HRP (ab6721)
All lanes:
Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798) at 1/50000 dilution

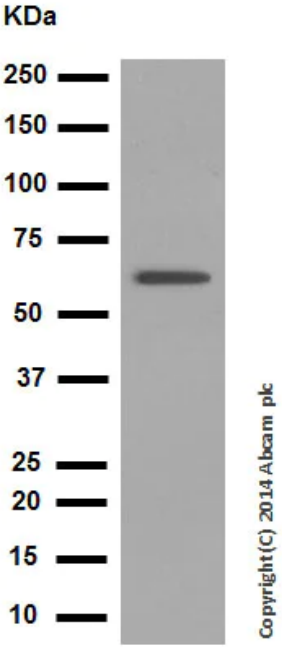
All lanes:
Western blot - T-47D whole cell lysate (ab14899) at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab6721) at 1/2000 dilution

Predicted band size: 61 kDa

Observed band size: 60 kDa



Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Western blot staining of T47-D cell lysate using rabbit Anti-Hsp60 antibody

Blocking Buffer: 5% NFDM/TBST
Dilution Buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798) at 1/20000 dilution

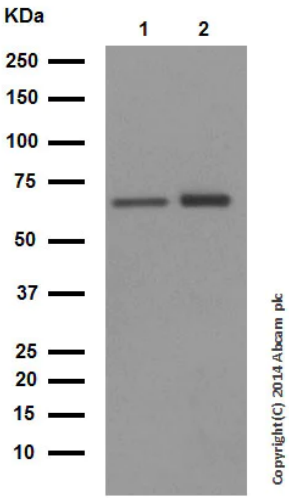
All lanes:
T47-D cell lysate at 10 µg

Secondary

All lanes:
HRP conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 61 kDa

Observed band size: 60 kDa



Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Western blot staining using rabbit Anti-Hsp60 antibody

Blocking Buffer: 5% NFDM/TBST
Dilution Buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798) at 1/50000 dilution

Lane 1:
MCF7 cell lysate at 20 µg

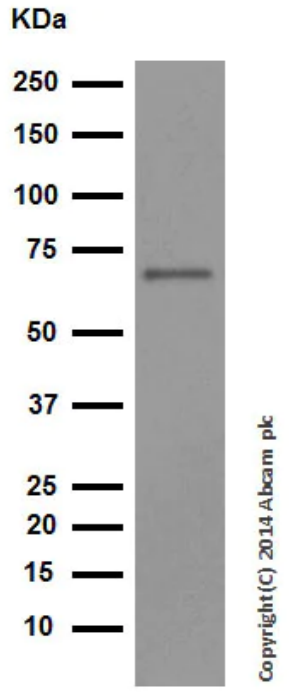
Lane 2:
SW480 cell lysate at 20 µg

Secondary

All lanes:
HRP conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 61 kDa

Observed band size: 60 kDa



Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798)

Hsp60 Western blot staining of Pig heart tissue lysate using rabbit Anti-Hsp60 antibody

Blocking Buffer: 5% NFDM/TBST
Dilution Buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-Hsp60 antibody - Mitochondrial Marker (ab46798) at 1/50000 dilution

All lanes:
Pig heart tissue lysate at 20 µg

Secondary

All lanes:
HRP conjugated goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 61 kDa

Observed band size: 60 kDa

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