abcam

ab215191

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) is a rabbit monoclonal antibody detecting DFNA5/GSDME in **Western Blot, Flow Cytometry (Intra), IP**. Suitable for **Human, Mouse, Rat**.

- Clone EPR19859 is the most cited clone to DFNA5/GSDME
- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 150 publications

Recombinant | RabMAb | KO Validated | 20ul selling size

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	EPR19859
Purification technique	Affinity purification Protein A
Specificity	Our previous testing data indicates that this antibody detects no signal or very weak signal in mouse heart, spleen, lung, stomach, testicle, skin, pancreas, muscle and lymph node tissues. Final results may be affected by the expression level of the tested samples.
Concentration	0.558 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	Our previous testing data indicates that this antibody detects no signal or very weak signal in mouse heart, spleen, lung, stomach, testicle, skin, pancreas, muscle and lymph node tissues. Final results may be affected by the expression level of the tested samples.

Species	Human
Dilution info	1/1000

Notes	Our previous testing data indicates that this antibody detects no signal or very weak signal in mouse heart, spleen, lung, stomach, testicle, skin, pancreas, muscle and lymph node tissues. Final results may be affected by the expression level of the tested samples.

Species	Transfected cell lysate
Dilution info	1/1000
Notes	Our previous testing data indicates that this antibody detects no signal or very weak signal in mouse heart, spleen, lung, stomach, testicle, skin, pancreas, muscle and lymph node tissues. Final results may be affected by the expression level of the tested samples.

Species	Rat
Dilution info	1/1000
Notes	Our previous testing data indicates that this antibody detects no signal or very weak signal in mouse heart, spleen, lung, stomach, testicle, skin, pancreas, muscle and lymph node tissues. Final results may be affected by the expression level of the tested samples.

Flow Cyt (Intra)

Tested

Species	Mouse
Dilution info	1/60
Notes	-

Species	Human
Dilution info	1/60
Notes	-

Expected

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

Not recommended

Species	Transfected cell lysate
Dilution info	-
Notes	-

Target data

See full target information GSDME

Function	Gasdermin-E. Precursor of a pore-forming protein that converts non-inflammatory apoptosis to pyroptosis (PubMed:27281216, PubMed:28459430, PubMed:33852854, PubMed:35594856, PubMed:36607699). This form constitutes the precursor of the pore-forming protein: upon cleavage, the released N-terminal moiety (Gasdermin-E, N-terminal) binds to membranes and forms pores, triggering pyroptosis (PubMed:28459430). Gasdermin-E, N-terminal. Pore-forming protein produced by cleavage by CASP3 or granzyme B (GZMB), which converts non-inflammatory apoptosis to pyroptosis or promotes granzyme-mediated pyroptosis, respectively (PubMed:27281216, PubMed:28459430, PubMed:32188940, PubMed:33852854, PubMed:35594856). After cleavage, moves to the plasma membrane, homooligomerizes within the membrane and forms pores of 10-15 nanometers (nm) of inner diameter, allowing the release of mature interleukins (IL1B and IL16) and triggering pyroptosis (PubMed:28459430, PubMed:32188940, PubMed:33852854, PubMed:35594856). Binds to inner leaflet lipids, bisphosphorylated phosphatidylinositols, such as phosphatidylinositol (4,5)-bisphosphate (PubMed:28459430). Cleavage by CASP3 switches CASP3-mediated apoptosis induced by TNF or danger signals, such as chemotherapy drugs, to pyroptosis (PubMed:27281216, PubMed:28459430, PubMed:32188940). Mediates secondary necrosis downstream of the mitochondrial apoptotic pathway and CASP3 activation as well as in response to viral agents (PubMed:28045099). Exhibits bactericidal activity (PubMed:27281216). Cleavage by GZMB promotes tumor suppressor activity by triggering robust anti-tumor immunity (PubMed:21522185, PubMed:32188940). Suppresses tumors by mediating granzyme-mediated pyroptosis in target cells of natural killer (NK) cells: cleavage by granzyme B (GZMB), delivered to target cells from NK-cells, triggers pyroptosis of tumor cells and tumor suppression (PubMed:31953257, PubMed:32188940). May play a role in the p53/TP53-regulated cellular response to DNA damage (PubMed:16897187). Gasdermin-E, N-terminal. (Microbial infection) Pore-forming protein, which promotes maternal placental pyroptosis in response to Zika virus infection, contributing to adverse fetal outcomes.

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

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), IP and WB.

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) was first used in a scientific publication in 2017 and has been cited over 153 times in peer reviewed journals. It's performance in Western blot in mouse samples is trusted by the scientific community.

Abcam's high quality manufacturing and validation processes ensure Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

The specificity of Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) has been confirmed by Western Blot testing in DFNA5/GSDME knockout SGC-7901 cells.

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) has 4 independent reviews from customers.

Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) specifically detects DFNA5/GSDME (UniProt ID: O60443; Molecular weight: 55kDa) and is sold in 100 µL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EPR19859 - ab223877.

Antibody clone EPR19859 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 488, PE (ab225519, ab225520).

Gasdermin E (GSDME) plays a significant role in immunology by modulating the immune response, particularly through its involvement in pyroptosis, a form of programmed cell death

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	DFNA5 also known as GSDME (Gasdermin E) is a protein encoded by the GSDME gene. It has a molecular mass of approximately 59 kDa. The protein is expressed in various tissues including the cochlea in the inner ear and some epithelial tissues. Mechanically DFNA5/GSDME plays a role in inducing cell membrane pore formation leading to cell lysis. This activity relates to its involvement in processes like cell death specifically pyroptosis where the cell undergoes a form of programmed necrosis.
Biological function summary	DFNA5/GSDME serves as a pore-forming protein that facilitates pyroptotic cell death usually upon cleavage by caspase-3. This activity is important for innate immune response and the maintenance of cellular homeostasis. DFNA5/GSDME operates independently and does not form part of large protein complexes. The cleaved form inserts into the lipid bilayer of cell membranes contributing to the execution of cell death particularly under stress conditions or cellular insult.
Pathways	DFNA5/GSDME is involved in the pyroptosis and apoptosis pathways. It plays an essential role in the cellular response to inflammation and stress signals by interacting with caspase-3 a critical protease in the apoptosis pathway. The balance between apoptosis and pyroptosis decides cell fate with DFNA5/GSDME activation tipping towards pyroptotic cell death. The interconnection with other gasdermin family proteins such as GSDMD is notable as they share functional and structural similarities in promoting necrosis-like cell death processes.
Associated diseases and disorders	Mutations in the DFNA5 gene relate to progressive hearing loss (nonsyndromic sensorineural deafness). Dysregulation of GSDME has also been implicated in cancer where altered expression promotes tumorigenesis or tumor suppression depending on the context. In hearing loss GSDME's interaction with pathways influencing apoptosis highlights its pathogenic role while in cancer connections to caspase-3 show a potential dichotomy in cell survival and cell death regulation.

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.

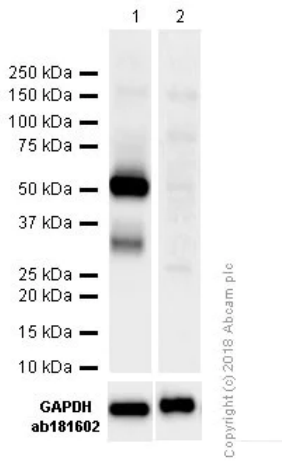
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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12 product images



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Exposure times:
Lane 1: 15s

Lane 2: 3 min

The band around 35kDa is GSDME-NT which might be cleaved by activated caspase⊠3 (PMID: 33589596, PMID: 31347748,PMID: 35623158).

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

All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/1000 dilution

Lane 1:
SH-SY5Y (Human neuroblastoma epithelial cell) whole cell lysates at 20 µg

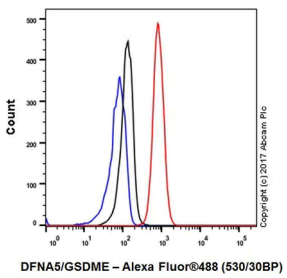
Lane 2:
SW480 (Human colorectal adenocarcinoma epithelial cell) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 54 kDa

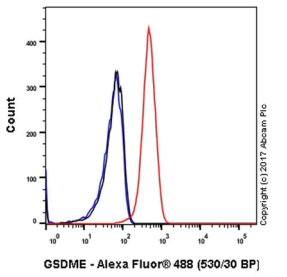
Observed band size: 55 kDa



Flow Cytometry (Intracellular) - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Flow Cytometry (Intracellular) staining using rabbit Anti-DFNA5/GSDME antibody

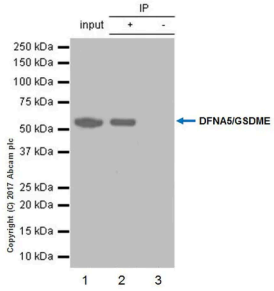
Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized SH-SY5Y (human neuroblastoma cell line from bone marrow) cell line labeling DFNA5/GSDME with ab215191 at 1/60 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Flow Cytometry (Intracellular) staining using rabbit Anti-DFNA5/GSDME antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanol permeabilized EMT6 (mouse mammary carcinoma cell line) cell line labeling DFNA5/GSDMEwith ab215191 at 1/600 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor®488) (ab150077) at 1/2000 dilution was used as the secondary antibody.
EMT6 cells were kindly provided by our collaborator Dr. Feng Shao, NIBS



Immunoprecipitation - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

ab215191 at 1/30 immunoprecipitating DFNA5/GSDME in EMT6 (mouse mammary carcinoma cell line) whole cell lysate.
Lane 1 (input): EMT6 whole cell lysate (10µg)

Lane 2 (+): ab215191 + EMT6 whole cell lysate

Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab215191 in EMT6 whole cell lysate

For western blotting, ab215191 at 1/500. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1,000 dilution

Blocking buffer and concentration: 5% NFDM/TBST.

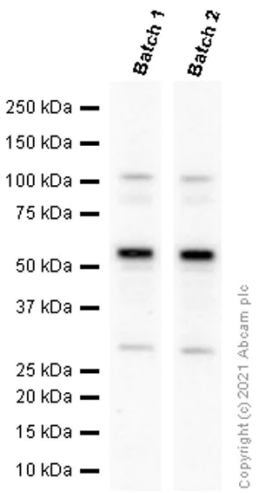
Diluting buffer and concentration: 5% NFDM /TBST.

EMT6 cells were kindly provided by our collaborator Dr. Feng Shao, NIBS

All lanes:
Immunoprecipitation - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

Predicted band size: 54 kDa

Exposure time: 55s

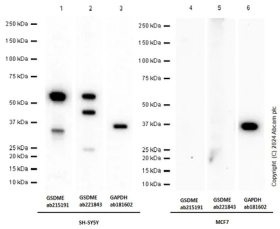


Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Different batches of ab215191 were tested on SH-SY5Y (Human neuroblastoma epithelial cell) lysate at 0.6 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 55 kDa.
All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

Predicted band size: 54 kDa



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Blocking and dilution buffer:5% NFDM/TBST.
Exposure time: Lanes 1-3: 10 seconds , Lanes 4-6: 40 seconds.

Both ab215191 and ab221843 show negative result in MCF7, which is also consistent with the predicted expression pattern.

Lanes 1 and 4:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/1000 dilution

Lanes 2 and 5:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859-60] - C-terminal (ab221843) at 1/1000 dilution

Lanes 1 - 3:
SH-SY5Y (Human neuroblastoma epithelial cell) whole cell lysate at 20 µg

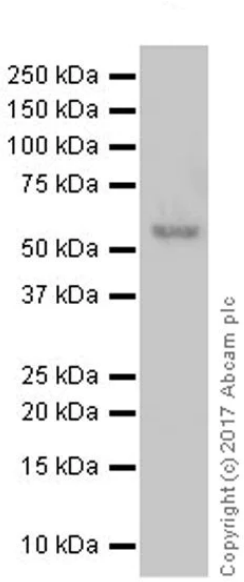
Lanes 4 - 6:
MCF7 (Human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 54 kDa

Observed band size: 55 kDa



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining of Human fetal brain lysate using rabbit Anti-DFNA5/GSDME antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 28459430).

All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/1000 dilution

All lanes:
Human fetal brain lysate at 10 µg

Secondary

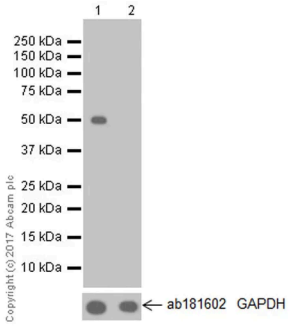
All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 54 kDa

Observed band size: 55 kDa

Exposure time: 3min



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The cell lysates were kindly provided by our collaborator, Dr. Feng Shao, NIBS.

All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/5000 dilution

Lane 1:
SH-SY5Y (human neuroblastoma cell line from bone marrow) whole cell lysate at 10 µg

Lane 2:
DFNA5/GSDME knockout SH-SY5Y (human neuroblastoma cell line from bone marrow) whole cell lysate at 10 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 54 kDa

Observed band size: 55 kDa

Exposure time: 15s

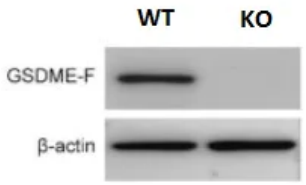


Image from Wang Y et al., Biochem Biophys Res Commu. 2018;495(1):1418-1425. Fig 4(A).; 10.1016/j.bbrc.2017.11.156 with permission from Elsevier.

Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

https://www.sciencedirect.com/journal/biochemical-and-biophysical-research-communications
All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/1000 dilution

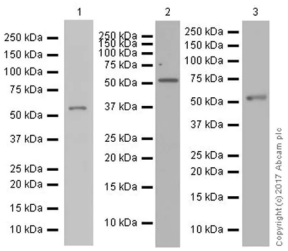
Lane 1:
Wild Type SGC-7901 (human papillomavirus-related endocervical adenocarcinoma cell line) cell lysates

Lane 2:
DFNA5/GSDME Knockout SGC-7901 cell lysates

Secondary

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

Predicted band size: 54 kDa



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
The molecular weight observed is consistent with what has been described in the literature (PMID: 28459430).

The EMT6 cell lysate was kindly provided by our collaborator Dr. Feng Shao, NIBS.

All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/1000 dilution

Lane 1:
EMT6 (mouse mammary carcinoma cell line) whole cell lysate at 10 µg

Lane 2:
Mouse brain lysate at 10 µg

Lane 3:
Rat brain lysate at 10 µg

Secondary

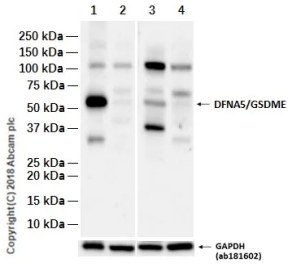
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 54 kDa

Observed band size: 55 kDa

Exposure time: 3min



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

DFNA5/GSDME Western blot staining using rabbit Anti-DFNA5/GSDME antibody

Blocking and diluting buffer: 5% NFDM/TBST
All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 0.7 µg/mL

Lane 1:
Mouse brain tissue lysate at 20 µg

Lane 2:
Mouse kidney tissue lysate at 20 µg

Lane 3:
Mouse liver tissue lysate at 20 µg

Lane 4:
Mouse thymus tissue lysate at 20 µg

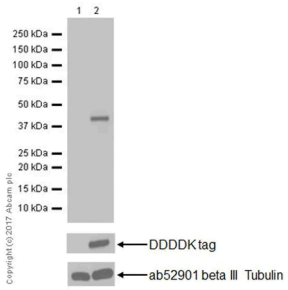
Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG) at 1/2000 dilution

Predicted band size: 54 kDa

Observed band size: 55 kDa

Exposure time: 3min



Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191)

Blocking/Dilution buffer: 5% NFDM/TBST.
This antibody is specific to the N-terminus of DFNA5/GSDME.

The cell lysates were kindly provided by our collaborator, Dr. Feng Shao, NIBS.

All lanes:
Western blot - Anti-DFNA5/GSDME antibody [EPR19859] - N-terminal (ab215191) at 1/10000 dilution

Lane 1:
HEK-293 (human epithelial cell line from embryonic kidney) transfected with a control vector containing DDDDK tag, whole cell lysate at 20 µg

Lane 2:
HEK-293 (human epithelial cell line from embryonic kidney) transfected with DDDDK tagged DFNA5/GSDME (N-terminal) expression vector, whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 54 kDa

Observed band size: 37 kDa

Exposure time: 1s

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