abcam

ab214488

Anti-TROP2 antibody [EPR20043]

Anti-TROP2 antibody [EPR20043] (ab214488) is a rabbit monoclonal antibody detecting TROP2 in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat** samples.

Enhanced IHC validation data - Download the data
- IHC KO validated for confirmed specificity
- detailed IHC expression profiling in normal and clinically relevant cancer FFPE TMAs - TNBC, breast, ovarian, lung and endometrial cancer
- protocols for BOND RX™ and Ventana DISCOVERY ULTRA

Most cited clone to TROP2
Over 10 publications
Biophysical QC for unrivalled batch-batch consistency

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	EPR20043
Purification technique	Affinity purification Protein A
Concentration	0.584 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Mouse
Dilution info	1/2000
Notes	-

Species	Human
Dilution info	1/2000
Notes	-

Species	Rat
Dilution info	1/2000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	ab214488 is recommended for mouse and rat in IHC Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/2000
Notes	ab214488 is recommended for mouse and rat in IHC Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/2000
Notes	ab214488 is recommended for mouse and rat in IHC Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information TACSTD2

Function	May function as a growth factor receptor.

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-TROP2 antibody [EPR20043] (ab214488) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in Flow Cyt (Intra), ICC/IF, IHC-P and WB.

Abcam's high quality manufacturing and validation processes ensure Anti-TROP2 antibody [EPR20043] (ab214488) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

The specificity of Anti-TROP2 antibody [EPR20043] (ab214488) has been confirmed by Western Blot testing in TROP2 knockout MCF7 cells.

Anti-TROP2 antibody [EPR20043] (ab214488) has 9 independent reviews from customers.

Anti-TROP2 antibody [EPR20043] (ab214488) specifically detects TROP2 (UniProt ID: P09758; Molecular weight: 34kDa) and is sold in 100 µL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EPR20043 - ab222935.

Antibody clone EPR20043 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 647, Alexa Fluor® 488, PE, APC, HRP, Alkaline Phosphatase, Alexa Fluor® 594, Alexa Fluor® 568, Alexa Fluor® 750 (ab281582, ab281933, ab303028, ab303029, ab303030, ab308661, ab310365, ab312357, ab321379).

TROP2 is a cell surface protein that is overexpressed in various cancers, playing a crucial role in tumor growth and metastasis. In immuno-oncology, TROP2 is a target for antibody-drug conjugates and is associated with resistance to certain immunotherapies.

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	TROP2 also known as TACSTD2 or tumor-associated calcium signal transducer 2 is a single-pass type I membrane glycoprotein. This protein is about 35 kDa in mass and primarily expresses in epithelial tissues. It acts as a transmembrane receptor that plays a role in signal transduction due to its domain structure binding and activation processes on the cell surface. TROP2 exhibits high expression in several types of tumors making it a potential target for therapeutic antibodies like anti-TROP2 anti trop2 or anti-TROP-2.
Biological function summary	TROP2 mediates calcium signaling and cell proliferation. It functions by being a part of a signaling complex on the cell membrane which affects multiple cellular activities such as cell growth motility and survival. Its role in maintaining the integrity of the epithelial cell layer also shows TROP2's significance in normal tissue homeostasis. The interaction of TROP2 with the extracellular matrix and other cell surface proteins support the structural integrity and communication between cells.
Pathways	TROP2 plays a central role in the PI3K/AKT and MAPK signaling pathways that regulate cell growth and survival. Within these pathways TROP2 works in concert with proteins like ERK and AKT important for transmitting extracellular signals into appropriate cellular responses. These pathways are key regulators of many physiological processes including cell cycle progression and apoptosis prevention.
Associated diseases and disorders	TROP2 is strongly associated with several types of cancers particularly epithelial cancers like breast and pancreatic cancer. Overexpression of TROP2 in tumors often correlates with poor prognosis and aggressive disease phenotypes. Interaction between TROP2 and proteins like EGFR in cancer cell signaling pathways amplifies tumor progression and metastasis. Understanding these associations makes TROP2 a significant target in developing therapeutic strategies for cancer treatment.

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.

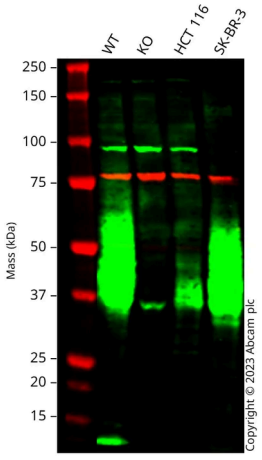
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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17 product images



Western blot - Anti-TROP2 antibody [EPR20043] (ab214488)

Western blot: Anti-TACSTD2 antibody [EPR20043] (ab214488) staining at 1/2000 dilution, shown in green; Mouse anti-CANX [CANX/1543] (ab238078) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab214488 was shown to bind specifically to TACSTD2. A band was observed at 36-70 kDa in wild-type MCF7 cell lysates with no signal observed at this size in TACSTD2 knockout cell line. To generate this image, wild-type and TACSTD2 knockout MCF7 cell lysates were analysed. First, 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 IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.

All lanes:
Western blot - Anti-TROP2 antibody [EPR20043] (ab214488) at 1/2000 dilution

Lane 1:
Wild-type MCF7 cell lysate at 20 µg

Lane 2:
TACSTD2 knockout MCF7 cell lysate at 20 µg

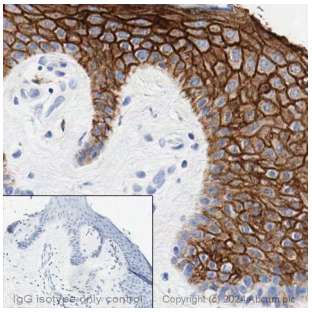
Lane 3:
HCT 116 cell lysate at 20 µg

Lane 4:
SK-BR-3 cell lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 36 kDa

Observed band size: 36-70 kDa

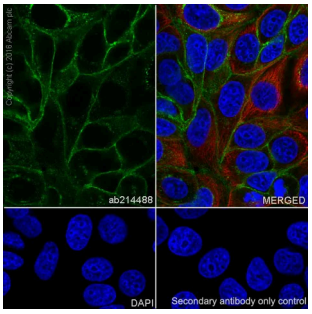


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

Immunohistochemical analysis of formalin fixed paraffin embedded Human skin labelling TROP2 with ab214488 at a concentration of 0.05 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

ab214488 Anti TROP2 antibody EPR20043 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining with IgG isotype control antibody ab172730.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Immunocytochemistry/ Immunofluorescence - Anti-TROP2 antibody [EPR20043] (ab214488)

TROP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TROP2 antibody

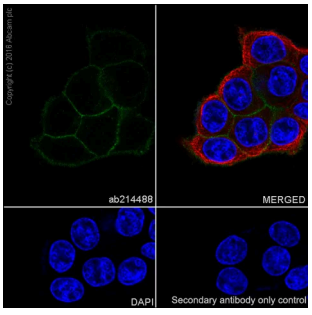
Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized MCF7 (Human breast adenocarcinoma cell line) cells labeling TROP2 with ab214488 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing membrane and weakly cytoplasmic staining on MCF7 cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.

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



Immunocytochemistry/ Immunofluorescence - Anti-TROP2 antibody [EPR20043] (ab214488)

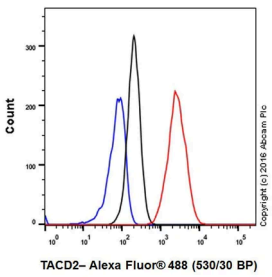
TROP2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TROP2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized HCT 116 (Human colorectal carcinoma cell line) cells labeling TROP2 with ab214488 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing membrane staining on HCT 116 cell line.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

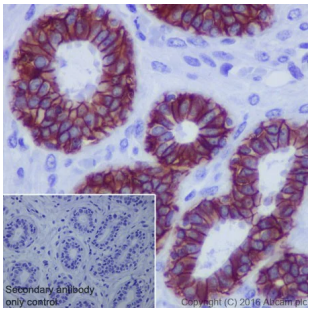
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-TROP2 antibody [EPR20043] (ab214488)

TROP2 Flow Cytometry (Intracellular) staining using rabbit Anti-TROP2 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed MCF7 (Human breast adenocarcinoma cell line) cells labeling TROP2 with ab214488 at 1/60 dilution (red) compared with aRabbit 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 1/2000 dilution was used as the secondary antibody. The permeabilization step was done using 90% methanol for 30 mins at -20 degrees.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

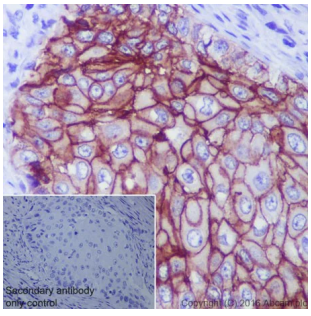
TROP2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TROP2 antibody

Immunohistochemical analysis of paraffin-embedded human breast tissue labeling TROP2 with ab214488 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution. Membrane staining on the duct epithelium of human breast is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) 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-TROP2 antibody [EPR20043] (ab214488)

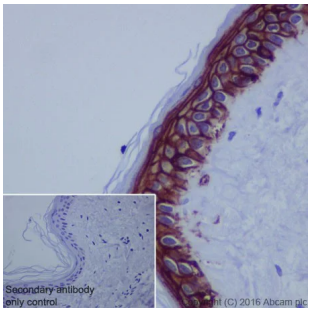
TROP2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TROP2 antibody

Immunohistochemical analysis of paraffin-embedded human cervix cancer tissue labeling TROP2 with ab214488 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution. Membrane staining on the tumor cells of human cervix cancer is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) 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-TROP2 antibody [EPR20043] (ab214488)

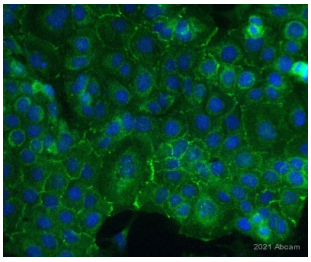
TROP2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TROP2 antibody

Immunohistochemical analysis of paraffin-embedded human skin tissue labeling TROP2 with ab214488 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution. Membrane staining on the squamous epithelium of human skin is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution.

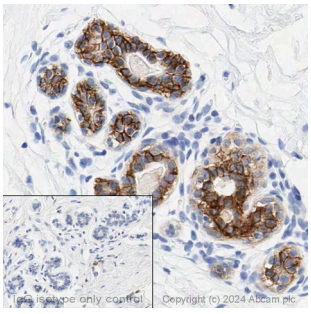
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



This image is courtesy of an anonymous customer review

Immunocytochemistry - Anti-TROP2 antibody [EPR20043] (ab214488)

Immunocytochemistry analysis of acetone-fixed human keratinocytes staining with ab214488 at 1/500 dilution. Secondary antibody was Alexa Fluor® 488 Goat anti-rabbit-IgG at 1/500 dilution. Samples were incubated with the primary antibody with PBS for 1 hour at 21°C. Blocking was done using 4% serum for 30 minutes at 21°C

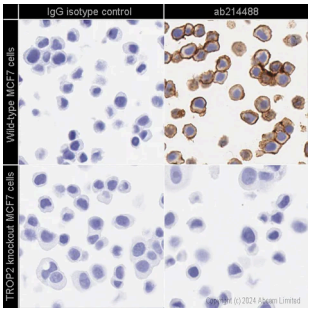


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

Immunohistochemical analysis of formalin fixed paraffin embedded Human breast labelling TROP2 with ab214488 at a concentration of 0.05 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

ab214488 Anti TROP2 antibody EPR20043 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining with IgG isotype control antibody ab172730.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



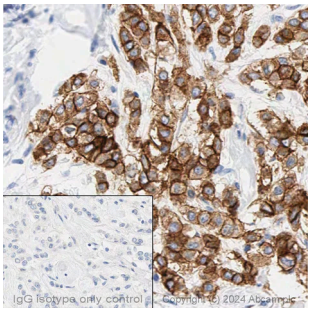
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

TROP2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TROP2 antibody

Immunohistochemical analysis of formalin fixed paraffin embedded wild type (top panel) or knock out (lower panel) MCF7 cells labelling TROP2 with ab214488 at a concentration of 0.03 µg/ml. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with a Bond™ Polymer Refine Detection kit. Heat mediated antigen retrieval was performed with NaCi buffer (pH 6.0, Epitope Retrieval Solution 1) for 20mins.

ab214488 Anti TROP2 antibody EPR20043 was incubated for 15mins at room temperature. Sections were counterstained with Hematoxylin. Images to the left show absence of staining with IgG isotype control antibody ab172730.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)

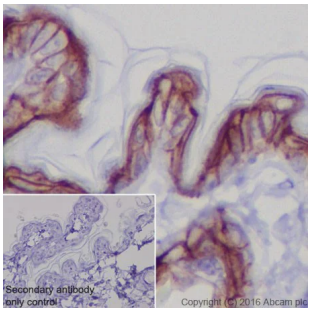


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

Immunohistochemical analysis of formalin fixed paraffin embedded Human breast adenocarcinoma labelling TROP2 with ab214488 at a concentration of 0.05 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

ab214488 Anti TROP2 antibody EPR20043 was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining with IgG isotype control antibody ab172730.

Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

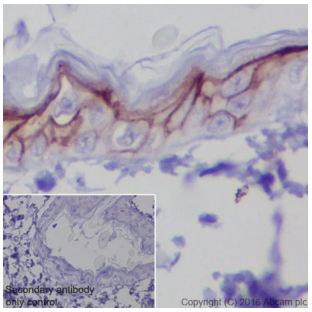
TROP2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TROP2 antibody

Immunohistochemical analysis of paraffin-embedded mouse skin tissue labeling TROP2 with ab214488 at 1/2000 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution. Membrane staining on the squamous epithelium of mouse skin is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution.

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

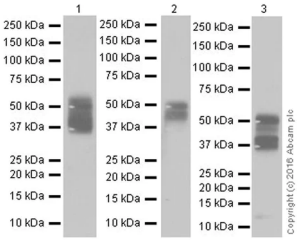


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TROP2 antibody [EPR20043] (ab214488)

Immunohistochemical analysis of paraffin-embedded rat skin tissue labeling TACD2 with ab214488 at 1/2000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution. Membrane staining on the squamous epithelium of rat skin is observed.

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) at 1/500 dilution.



Western blot - Anti-TROP2 antibody [EPR20043] (ab214488)

TROP2 Western blot staining using rabbit Anti-TROP2 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1/3: 2 seconds; Lane 2: 1 minute.

TROP2 is highly glycosylated and appears as band around 37-50kDa.The molecular weight observed is consistent with what has been described in the literature (PMID: 23070813)

All lanes:
Western blot - Anti-TROP2 antibody [EPR20043] (ab214488) at 1/2000 dilution

Lane 1:
HCT 116 (Human colorectal carcinoma cell line) whole cell lysate at 10 µg

Lane 2:
PC-3 (Human prostate adenocarcinoma cell line) whole cell lysate at 10 µg

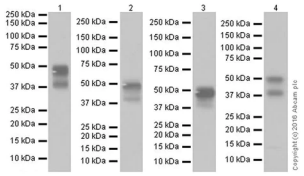
Lane 3:
MCF7 (Human breast adenocarcinoma cell line) whole cell lysate at 10 µg

Secondary

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

Predicted band size: 36 kDa

Observed band size: 37-50 kDa



Western blot - Anti-TROP2 antibody [EPR20043] (ab214488)

Blocking/Dilution buffer: 5% NFDM/TBST.
Exposure time: Lane 1/3: 3 seconds; Lane 2: 5 seconds; Lane 4: 15 seconds.

Lanes 1 - 3:
Western blot - Anti-TROP2 antibody [EPR20043] (ab214488) at 1/2000 dilution

Lane 4:
Western blot - Anti-TROP2 antibody [EPR20043] (ab214488) at 1/5000 dilution

Lane 1:
Human breast cancer lysate at 10 µg

Lane 2:
Human skin lysate at 10 µg

Lane 3:
Human placenta lysate at 10 µg

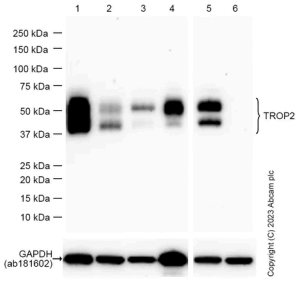
Lane 4:
Human prostate cancer lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 36 kDa

Observed band size: 37-50 kDa



Western blot - Anti-TROP2 antibody [EPR20043] (ab214488)

Blocking and diluting buffer and concentration: 5% NFDM /TBST. ab181602 was used as a GAPDH loading control. Negative sample: A549 (PMID: 22419550). TROP2 is highly glycosylated and appears as band around 37-50kDa.The molecular weight observed is consistent with what has been described in the literature (PMID: 23070813).
All lanes:
Western blot - Anti-TROP2 antibody [EPR20043] (ab214488) at 1/2000 dilution

Lane 1:
Mouse skin lysate at 20 µg

Lane 2:
Mouse kidney lysate at 20 µg

Lane 3:
Mouse lung lysate at 20 µg

Lane 4:
Rat skin lysate at 20 µg

Lane 5:
Rat lung lysate at 20 µg

Secondary

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

Predicted band size: 36 kDa

Exposure time: 60s

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