abcam

ab206656

Anti-VKORC1 antibody [EPR20245]

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	EPR20245
Purification technique	Affinity purification Protein A
Concentration	0.618 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/60

Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/100
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Target data

See full target information VKORC1

Function	Involved in vitamin K metabolism. Catalytic subunit of the vitamin K epoxide reductase (VKOR) complex which reduces inactive vitamin K 2,3-epoxide to active vitamin K. Vitamin K is required for the gamma-carboxylation of various proteins, including clotting factors, and is required for normal blood coagulation, but also for normal bone development.

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	Vitamin K epoxide reductase complex subunit 1 (VKORC1) also known as VKOR is an enzyme that plays an important role in the vitamin K cycle. This enzyme has a molecular mass of approximately 18 kDa. VKORC1 helps in reducing vitamin K 23-epoxide to its active hydroquinone form which is necessary for the gamma-carboxylation of vitamin K-dependent proteins. These proteins are mainly responsible for blood coagulation. VKORC1 expression is high in the liver where much of the synthesis of clotting factors occurs.
Biological function summary	VKORC1 is integral to the vitamin K cycle an essential process for activating vitamin K-dependent clotting factors. It operates within a complex with its protein partner VKORC1-like 1 (VKORC1L1). This partnership is important for maintaining effective blood coagulation. The active form of vitamin K produced by VKORC1 ensures the activity of several blood clotting factors especially factors II VII IX and X. Without proper function of VKORC1 these factors would remain inactive.
Pathways	The vitamin K cycle is where VKORC1 makes a significant impact and this cycle is vital for blood coagulation processes. Specifically VKORC1 reduces vitamin K epoxide working closely with gamma-glutamyl carboxylase (GGCX) another enzyme that modifies the glutamic acid residues on clotting factors. This modification is important for their proper functioning within the coagulation

	cascade. The interplay between VKORC1 and GGCX directly connects to the synthesis of active blood coagulation proteins.
Associated diseases and disorders	VKORC1 mutations are notably linked to warfarin resistance and susceptibility to bleeding disorders. Warfarin is an anticoagulant that targets VKORC1 to prevent clot formation and variations in this protein can lead to altered drug response. Furthermore any dysfunction in VKORC1 may result in vitamin K epoxide reductase deficiency affecting coagulation and leading to increased bleeding risk. Mutations could also affect partner proteins like coagulation factors II and VII leading to disorders related to abnormal blood clotting processes.

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

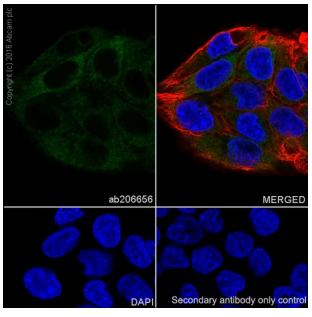
We do not recommend this combination. It is not covered by our product promise.

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.

9 product images



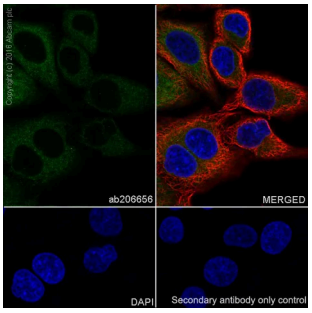
Immunocytochemistry/ Immunofluorescence - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VKORC1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma cell line) cells labeling VKORC1 with ab206656 at 1/100 dilution followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HepG2 cell line.

The nuclear counter stain is DAPI (blue). Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) 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.

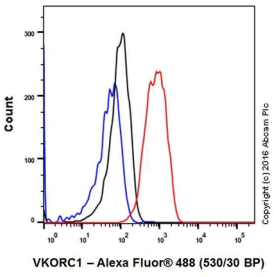


Immunocytochemistry/ Immunofluorescence - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-VKORC1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% Triton X-100 permeabilized A549 (Human lung carcinoma cell line) cells labeling VKORC1 with ab206656 at 1/100 dilution followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on A549 cell line.
The nuclear counter stain is DAPI (blue). Tubulin is detected with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at 1/200 dilution (red).

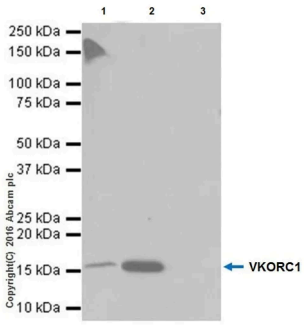
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.



Flow Cytometry (Intracellular) - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Flow Cytometry (Intracellular) staining using rabbit Anti-VKORC1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HepG2 (Human liver hepatocellular carcinoma cell line) cells labeling VKORC1 with ab206656 at 1/60 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabeled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (Alexa Fluorr® 488) at 1/2000 dilution was used as the secondary antibody.



Immunoprecipitation - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 was immunoprecipitated from 0.35 mg of HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate with ab206656 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab206656 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.
Lane 1: HepG2 whole cell lysate, 10 µg (Input).

Lane 2: ab206656 IP in HepG2 whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab206656 in HepG2 whole cell lysate.

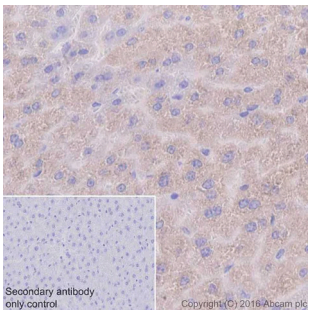
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 30 seconds.

All lanes:
Immunoprecipitation - Anti-VKORC1 antibody [EPR20245] (ab206656)

Predicted band size: 18 kDa

Observed band size: 15 kDa

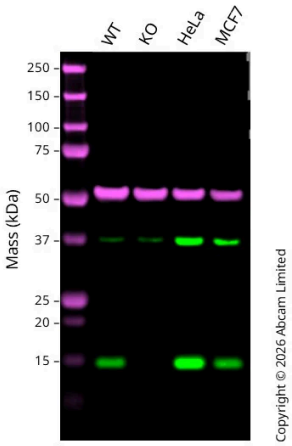


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-VKORC1 antibody

Immunohistochemical analysis of paraffin-embedded mouse liver tissue labeling VKORC1 with ab206656 at 1/100 dilution followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on hepatocytes of mouse liver is observed [PMID: 25747820] [PMID:14765194]. Counter stained with Hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

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



Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Western blot staining using rabbit Anti-VKORC1 antibody

Western blot: Anti-VKORC1 antibody [EPR20245] ab206656 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 15 kDa in Wild-type HEK-293T cell lysates with no signal observed at this size in VKORC1 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-VKORC1 antibody [EPR20245] (ab206656) at 1/1000 dilution

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

Lane 2:
Western blot - Human VKORC1 knockout HEK-293T cell line (ab266095) at 20 µg

Lane 3:
HeLa cell lysates at 20 µg

Lane 4:
MCF7 cell lysates at 20 µg

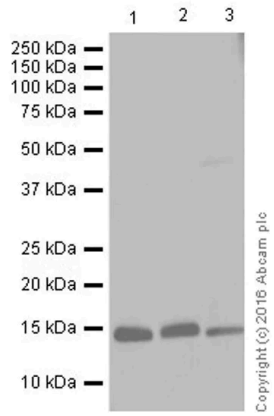
Secondary

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

Performed under reducing conditions.

Predicted band size: 18 kDa

Observed band size: 15 kDa



Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656)

VKORC1 Western blot staining using rabbit Anti-VKORC1 antibody

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656) at 1/1000 dilution

Lane 1:
HepG2 (Human liver hepatocellular carcinoma cell line) whole cell lysate at 20 µg

Lane 2:
A549 (Human lung carcinoma cell line) whole cell lysate at 20 µg

Lane 3:
Mouse liver lysate at 20 µg

Secondary

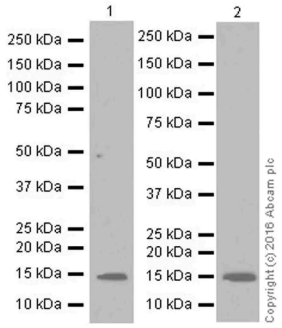
All lanes:

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

Predicted band size: 18 kDa

Observed band size: 15 kDa

Exposure time: 8s



Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656)

Blocking/Dilution buffer: 5% NFDM/TBST.
The expression profile/ molecular weight observed is consistent with what has been described in the literature (PMID: *25753038*).

All lanes:
Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656) at 1/1000 dilution

Lane 1:
Human fetal kidney lysate at 10 µg

Lane 2:
Human fetal liver lysate at 10 µg

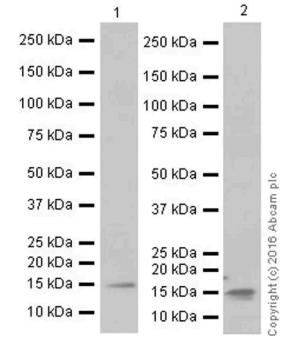
Secondary

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

Predicted band size: 18 kDa

Observed band size: 15 kDa

Exposure time: 3min



Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-VKORC1 antibody [EPR20245] (ab206656) at 1/1000 dilution

Lane 1:
Mouse lung lysate at 10 µg

Lane 2:
Mouse pancreas lysate at 10 µg

Secondary

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

Predicted band size: 18 kDa

Observed band size: 15 kDa

Exposure time: 3min

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