

## Product datasheet

# Anti-Vinculin antibody [EPR19579] ab207440

**KO VALIDATED** Recombinant RabMAb

[1 References](#) [5 Images](#)

### Overview

<b>Product name</b>	Anti-Vinculin antibody [EPR19579]
<b>Description</b>	Rabbit monoclonal [EPR19579] to Vinculin
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Recombinant fragment within Human Vinculin aa 1-300. The exact sequence is proprietary. Database link: <a href="#">P18206</a>
<b>Positive control</b>	WB: K562, HeLa, HEK-293T, HUVEC, MCF7, PC-3, C6, PC-12, A431, and NIH/3T3 whole cell lysates; human testis, fetal heart and fetal kidney lysates; mouse heart, kidney and spleen lysates; rat kidney and spleen lysates.
<b>General notes</b>	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> <li>- Long-term security of supply</li> <li>- Animal-free production</li> </ul> <p>For more information <a href="#">see here</a>.</p> <p>Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to <a href="#">RabMAb<sup>®</sup> patents</a>.</p> <p>Reproducibility is key to advancing scientific discovery and accelerating scientists' next breakthrough.</p> <p>Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.</p> <p>We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications &amp; species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise<sup>™</sup> guarantee.</p> <p>In preparation for this, we have started to update the applications &amp; species that this product is Abpromise guaranteed for.</p> <p>We are also updating the applications &amp; species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.</p>

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

## Properties

---

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Storage buffer</b>	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR19579
<b>Isotype</b>	IgG

## Applications

---

Our [Abpromise guarantee](#) covers the use of **ab207440** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Detects a band of approximately 124 kDa (predicted molecular weight: 124 kDa).

---

## Target

---

<b>Function</b>	Actin filament (F-actin)-binding protein involved in cell-matrix adhesion and cell-cell adhesion. Regulates cell-surface E-cadherin expression and potentiates mechanosensing by the E-cadherin complex. May also play important roles in cell morphology and locomotion.
<b>Tissue specificity</b>	Metavinculin is muscle-specific.
<b>Involvement in disease</b>	Defects in VCL are the cause of cardiomyopathy dilated type 1W (CMD1W) [MIM:611407]. Dilated cardiomyopathy is a disorder characterized by ventricular dilation and impaired systolic function, resulting in congestive heart failure and arrhythmia. Patients are at risk of premature death. Defects in VCL are the cause of cardiomyopathy familial hypertrophic type 15 (CMH15) [MIM:613255]. It is a hereditary heart disorder characterized by ventricular hypertrophy, which is usually asymmetric and often involves the interventricular septum. The symptoms include dyspnea, syncope, collapse, palpitations, and chest pain. They can be readily provoked by exercise. The disorder has inter- and intrafamilial variability ranging from benign to malignant forms with high

risk of cardiac failure and sudden cardiac death.

## Sequence similarities

Belongs to the vinculin/alpha-catenin family.

## Domain

Exists in at least two conformations. When in the closed, 'inactive' conformation, extensive interactions between the head and tail domains prevent detectable binding to most of its ligands. It takes on an 'active' conformation after cooperative and simultaneous binding of two different ligands. This activation involves displacement of the head-tail interactions and leads to a significant accumulation of ternary complexes. The active form then binds a number of proteins that have both signaling and structural roles that are essential for cell adhesion. The N-terminal globular head (Vh) comprises of subdomains D1-D4. The C-terminal tail (Vt) binds F-actin and cross-links actin filaments into bundles. An intramolecular interaction between Vh and Vt masks the F-actin-binding domain located in Vt. The binding of talin and alpha-actinin to the D1 subdomain of vinculin induces a helical bundle conversion of this subdomain, leading to the disruption of the intramolecular interaction and the exposure of the cryptic F-actin-binding domain of Vt. Vt inhibits actin filament barbed end elongation without affecting the critical concentration of actin assembly.

## Post-translational modifications

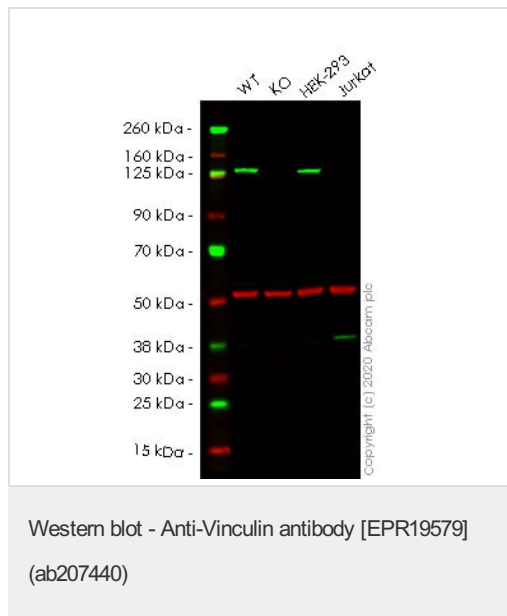
Phosphorylated; on serines, threonines and tyrosines. Phosphorylation on Tyr-1133 in activated platelets affects head-tail interactions and cell spreading but has no effect on actin binding nor on localization to focal adhesion plaques.

Aceylated; mainly by myristic acid but also small amount of palmitic acid.

## Cellular localization

Cytoplasm > cytoskeleton. Cell junction > adherens junction. Cell membrane. Cytoplasmic face of adhesion plaques. Recruitment to cell-cell junctions occurs in a myosin II-dependent manner. Interaction with CTNNB1 is necessary for its localization to the cell-cell junctions.

## Images



**All lanes :** Anti-Vinculin antibody [EPR19579] (ab207440) at 1/1000 dilution

**Lane 1 :** Wild-type HeLa cell lysate

**Lane 2 :** Vinculin knockout HeLa cell lysate

**Lane 3 :** HEK-293 cell lysate

**Lane 4 :** Jurkat cell lysate

Lysates/proteins at 20 µg per lane.

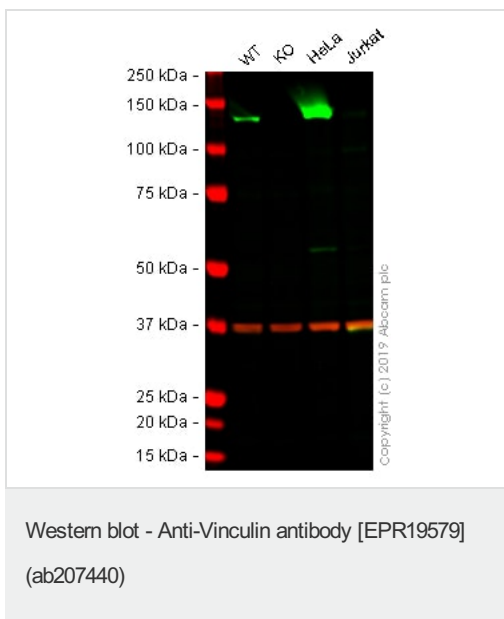
Performed under reducing conditions.

**Predicted band size:** 124 kDa

**Lanes 1-4:** Merged signal (red and green). Green - ab207440 observed at 124 kDa. Red - loading control [ab7291](#) observed at 50 kDa.

ab207440 Anti-Vinculin antibody [EPR19579] was shown to

specifically react with Vinculin in wild-type HeLa cells. Loss of signal was observed when knockout cell line [ab265580](#) (knockout cell lysate [ab257795](#)) was used. Wild-type and Vinculin knockout samples were subjected to SDS-PAGE. ab207440 and Anti-alpha Tubulin antibody [DM1A] - Loading Control ([ab7291](#)) were incubated overnight at 4°C at 1 in 1000 dilution and 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 :** Anti-Vinculin antibody [EPR19579] (ab207440) at 1/1000 dilution

**Lane 1 :** Wild-type A431 whole cell lysate

**Lane 2 :** VCL knockout A431 whole cell lysate

**Lane 3 :** HeLa whole cell lysate

**Lane 4 :** Jurkat whole cell lysate

Lysates/proteins at 20 µg per lane.

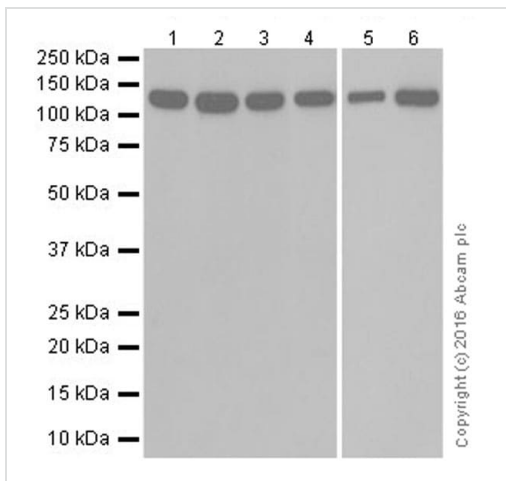
Performed under reducing conditions.

**Predicted band size:** 124 kDa

**Observed band size:** 124 kDa

**Lanes 1 -4:** Merged signal (red and green). Green - ab207440 observed at 124 kDa. Red - loading control, [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

ab207440 was shown to react with VCL in A431 wild-type cells in Western blot. Loss of signal was observed when VCL knockout sample was used. A431 wild-type and VCL knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% Milk in TBS-T (0.1% Tween®) before incubation with ab207440 and [ab8245](#) (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ([ab216776](#)) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-Vinculin antibody [EPR19579] (ab207440)

**All lanes** : Anti-Vinculin antibody [EPR19579] (ab207440) at 1/2000 dilution

**Lane 1** : K562 (Human chronic myelogenous leukemia cell line from bone marrow ) whole cell lysate

**Lane 2** : HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate

**Lane 3** : HUVEC (Human umbilical vein endothelial cell line) whole cell lysate

**Lane 4** : MCF7 (Human breast adenocarcinoma cell line) whole cell lysate

**Lane 5** : PC-3 (Human prostate adenocarcinoma cell line) whole cell lysate

**Lane 6** : Human testis lysate

Lysates/proteins at 10 µg per lane.

### Secondary

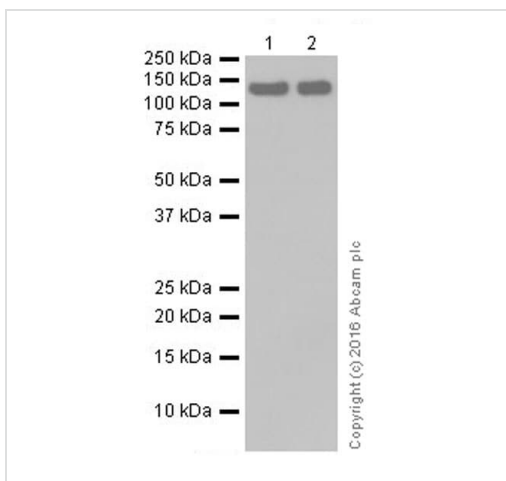
**All lanes** : Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

**Predicted band size:** 124 kDa

**Observed band size:** 124 kDa

Blocking/Dilution buffer: 5% NFDm/TBST.

Exposure time: Lane 1-4: 3 minutes; Lane 5/6: 5 seconds.



Western blot - Anti-Vinculin antibody [EPR19579] (ab207440)

**All lanes** : Anti-Vinculin antibody [EPR19579] (ab207440) at 1/1000 dilution

**Lane 1** : Human fetal heart lysate

**Lane 2** : Human fetal kidney lysate

Lysates/proteins at 10 µg per lane.

### Secondary

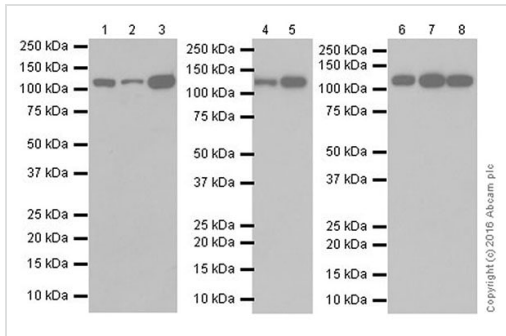
**All lanes** : Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

**Predicted band size:** 124 kDa

**Observed band size:** 124 kDa

**Exposure time:** 30 seconds

Blocking/Dilution buffer: 5% NFDm/TBST.



Western blot - Anti-Vinculin antibody [EPR19579]  
(ab207440)

**All lanes :** Anti-Vinculin antibody [EPR19579] (ab207440) at 1/1000 dilution

**Lane 1 :** Mouse heart lysate

**Lane 2 :** Mouse kidney lysate

**Lane 3 :** Mouse spleen lysate

**Lane 4 :** Rat kidney lysate

**Lane 5 :** Rat spleen lysate

**Lane 6 :** C6 (Rat glial tumor cell line) whole cell lysate

**Lane 7 :** PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate

**Lane 8 :** NIH/3T3 (Mouse embryonic fibroblast cell line) whole cell lysate

Lysates/proteins at 10 µg per lane.

### Secondary

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

**Predicted band size:** 124 kDa

**Observed band size:** 124 kDa

Blocking/Dilution buffer: 5% NFDm/TBST.

Exposure times: Lane 1-3: 30 seconds; Lane 4-8: 10 seconds.

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish

- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### **Terms and conditions**

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors