abcam

Product datasheet

# Anti-CD44 antibody [EPR1013Y] ab51037

KO VALIDATED Recombinant RabMAb

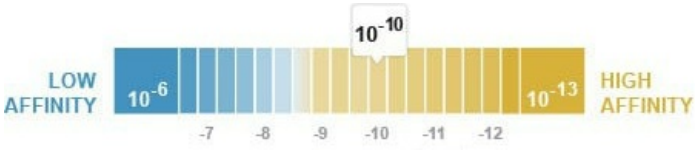
11 Abreviews 153 References 13 Images

## Overview

| | |
|---|---|
| **Product name** | Anti-CD44 antibody [EPR1013Y] |
| **Description** | Rabbit monoclonal [EPR1013Y] to CD44 |
| **Host species** | Rabbit |
| **Tested applications** | **Suitable for:** IHC-P, WB<br>**Unsuitable for:** Flow Cyt,ICC/IF or IP |
| **Species reactivity** | **Reacts with:** Human<br>**Does not react with:** Mouse, Rat |
| **Immunogen** | Synthetic peptide. This information is proprietary to Abcam and/or its suppliers. |
| **Positive control** | WB: MDA-MB-231, TF-1, HeLa and A549 cell lysates. IHC-P: Pancreatic and cervival cancer, breast and thyroid gland carcinoma, glioma, tonsil and skin tissues. |
| **General notes** | This product is a recombinant monoclonal antibody, which offers several advantages including:<br>- High batch-to-batch consistency and reproducibility<br>- Improved sensitivity and specificity<br>- Long-term security of supply<br>- Animal-free production<br>For more information **see here**.<br>Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**. |

## Properties

| | |
|---|---|
| **Form** | Liquid |
| **Storage instructions** | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle. |
| **Dissociation constant ($K_D$)** | $K_D = 3.76 \times 10^{-10}$ M |




Learn more about $K_D$

| | |
|---|---|
| **Storage buffer** | pH: 7.20<br>Preservative: 0.01% Sodium azide<br>Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.5% BSA |
| **Purity** | Protein A purified |
| **Clonality** | Monoclonal |
| **Clone number** | EPR1013Y |
| **Isotype** | IgG |

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab51037 in the following tested applications.

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

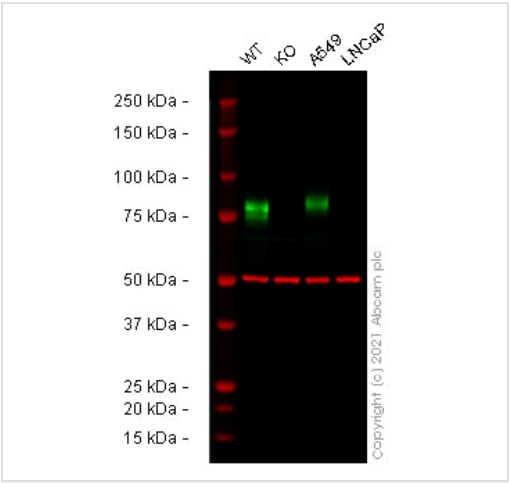
| Application | Abreviews | Notes |
|---|---|---|
| **IHC-P** | ★★★★☆ (3) | 1/50 - 1/100. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol. |
| **WB** | ★★★★☆ (4) | 1/5000. Detects a band of approximately 82 kDa (predicted molecular weight: 82 kDa). |

**Application notes** Is unsuitable for Flow Cyt,ICC/IF or IP.

## Target

| | |
|---|---|
| **Function** | Receptor for hyaluronic acid (HA). Mediates cell-cell and cell-matrix interactions through its affinity for HA, and possibly also through its affinity for other ligands such as osteopontin, collagens, and matrix metalloproteinases (MMPs). Adhesion with HA plays an important role in cell migration, tumor growth and progression. Also involved in lymphocyte activation, recirculation and homing, and in hematopoiesis. Altered expression or dysfunction causes numerous pathogenic phenotypes. Great protein heterogeneity due to numerous alternative splicing and post-translational modification events. |
| **Tissue specificity** | Isoform 10 (epithelial isoform) is expressed by cells of epithelium and highly expressed by carcinomas. Expression is repressed in neuroblastoma cells. |
| **Sequence similarities** | Contains 1 Link domain. |
| **Domain** | The lectin-like LINK domain is responsible for hyaluronan binding. |
| **Post-translational modifications** | Proteolytically cleaved in the extracellular matrix by specific proteinases (possibly MMPs) in several cell lines and tumors.<br>N-glycosylated.<br>O-glycosylated; contains more-or-less-sulfated chondroitin sulfate glycans, whose number may affect the accessibility of specific proteinases to their cleavage site(s).<br>Phosphorylated; activation of PKC results in the dephosphorylation of Ser-706 (constitutive phosphorylation site), and the phosphorylation of Ser-672. |
| **Cellular localization** | Membrane. |

## Images




Western blot - Anti-CD44 antibody [EPR1013Y] (ab51037)

**All lanes :** Anti-CD44 antibody [EPR1013Y] (ab51037) at 1/5000 dilution

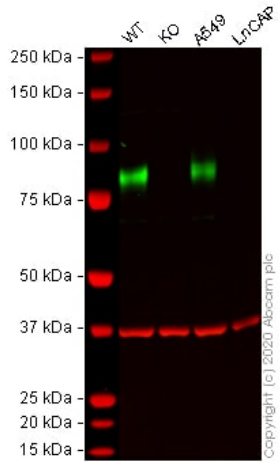
**Lane 1 :** Wild-type HeLa cell lysate
**Lane 2 :** CD44 knockout HeLa cell lysate
**Lane 3 :** A549 cell lysate
**Lane 4 :** LNCaP cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size:** 82 kDa
**Observed band size:** 75-80 kDa

False colour image of Western blot: Anti-CD44 antibody [EPR1013Y] staining at 1/5000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (**ab7291**) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab51037 was shown to bind specifically to CD44. A band was observed at 75-80 kDa in wild-type HeLa cell lysates with no signal observed at this size in CD44 knockout cell line **ab262515** (knockout cell lysate **ab263938**). To generate this image, wild-type and CD44 knockout HeLa 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 Â°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 (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) at 1/20000 dilution.




Western blot - Anti-CD44 antibody [EPR1013Y] (ab51037)

**All lanes :** Anti-CD44 antibody [EPR1013Y] (ab51037) at 1/5000 dilution

**Lane 1 :** Wild-type HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate
**Lane 2 :** CD44 knockout HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate
**Lane 3 :** A549 (Human lung carcinoma cell line) whole cell lysate
**Lane 4 :** LNCaP (Human prostate cancer cell line) whole cell lysate

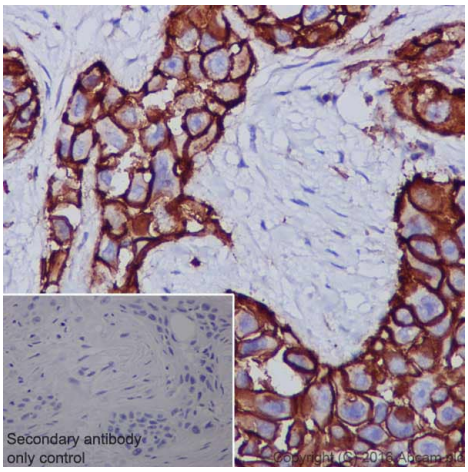
Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size:** 82 kDa
**Observed band size:** 80 kDa

**Lanes 1 - 4:** Merged signal (red and green). Green - ab51037 observed at 80 kDa. Red - loading control, **ab8245** (Mouse anti-GAPDH antibody [6C5]) observed at 37kDa.

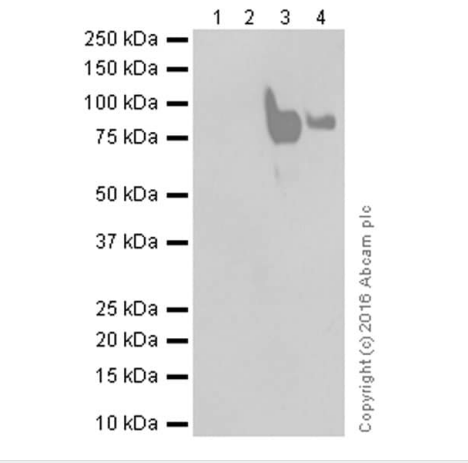
ab51037 was shown to react with CD44 in wild-type HeLa cells in western blot. Loss of signal was observed when CD44 knockout sample was used. Wild-type HeLa and CD44 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3% milk in TBS-T (0.1% Tween®) before incubation with ab51037 and **ab8245** (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 5000 dilution and a 1 in 20000 dilution respectively. Blots were incubated 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.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

Immunohistochemical analysis of paraffin-embedded human pancreatic cancer tissue labeling CD44 with ab51037 at 1/100 dilution followed by goat anti-rabbit IgG H&L (HRP) (**ab97051**, 1/500). The sample was counter stained with hematoxylin.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




Western blot - Anti-CD44 antibody [EPR1013Y] (ab51037)

**All lanes :** Anti-CD44 antibody [EPR1013Y] (ab51037) at 1/1000 dilution

**Lane 1 :** MCF-7 whole cell lysate
**Lane 2 :** Jurkat whole cell lysate
**Lane 3 :** MDA-MB-231 whole cell lysate
**Lane 4 :** HeLa whole cell lysate

Lysates/proteins at 10 µg per lane.

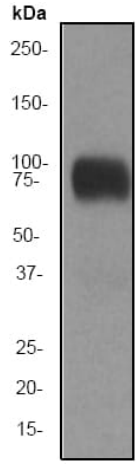
**Secondary**
**All lanes :** Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

**Predicted band size:** 82 kDa
**Observed band size:** 81 kDa

**Exposure time:** 3 minutes

Blocking and diluting buffer 5% NFDM/TBST

The expression of CD44 in MCF-7 is low (PMID: 25635866; PMID: 26005723). Jurkat does not express CD44 (PMID: 24127558).




Western blot - Anti-CD44 antibody [EPR1013Y] (ab51037)

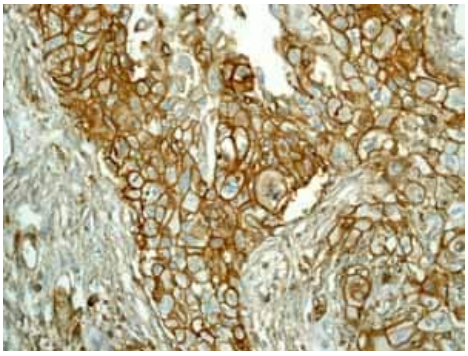
Anti-CD44 antibody [EPR1013Y] (ab51037) at 1/5000 dilution + TF-1 cell lysate at 10 µg

**Secondary**

Goat anti-Rabbit HRP labeled. at 1/2000 dilution

**Predicted band size:** 82 kDa

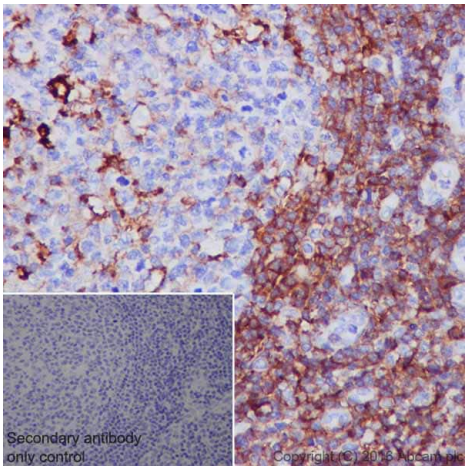
**Observed band size:** 82 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

ab51037 (1:100) showing positive staining in human Breast carcinoma tissue.

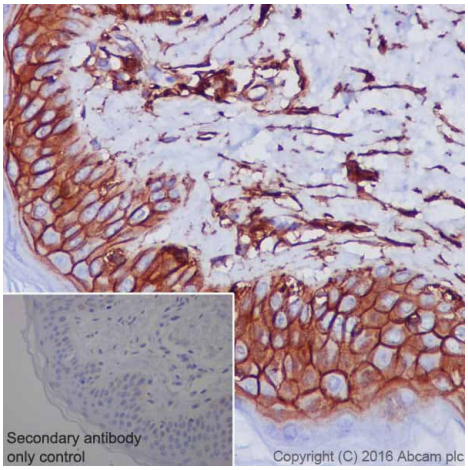
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling CD44 with ab51037 at 1/100 dilution followed by goat anti-rabbit IgG H&L (HRP) (**ab97051**, 1/500). The sample was counter stained with hematoxylin.

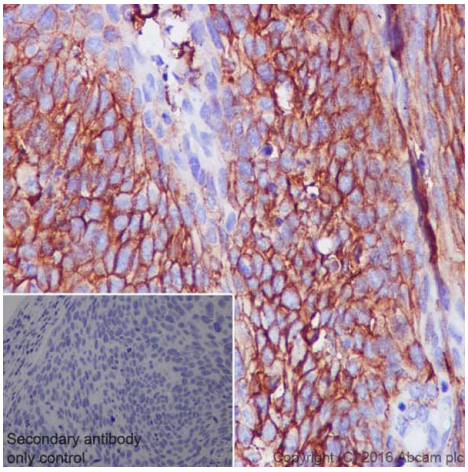
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

Immunohistochemical analysis of paraffin-embedded human skin tissue labeling CD44 with ab51037 at 1/100 dilution followed by goat anti-rabbit IgG H&L (HRP) (**ab97051**, 1/500). The sample was counter stained with hematoxylin.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

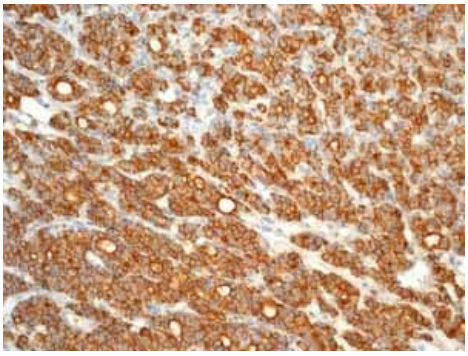
Immunohistochemical analysis of paraffin-embedded human cervical cancer tissue labeling CD44 with ab51037 at 1/100 dilution followed by goat anti-rabbit IgG H&L (HRP) (**ab97051**, 1/500). The sample was counter stained with hematoxylin.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

ab51037 (1:100) showing positive staining in human Glioma tissue.

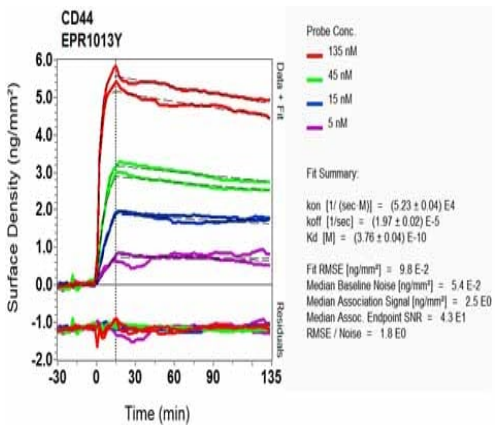
Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD44 antibody [EPR1013Y] (ab51037)

ab51037 (1:100) showing positive staining in human Thyroid gland carcinoma tissue.

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.




OI-RD Scanning - Anti-CD44 antibody [EPR1013Y] (ab51037)

Equilibrium disassociation constant ($K_D$)

Learn more about $K_D$

**Click here to learn more about $K_D$**


Anti-CD44 antibody [EPR1013Y] (ab51037)

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