

## Product datasheet

# Anti-ErbB2 / HER2 antibody [EP1045Y] ab134182

KO VALIDATED Recombinant RabMAb

★★★★☆ 3 Abreviews 46 References 15 Images

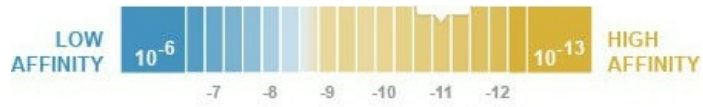
### Overview

<b>Product name</b>	Anti-ErbB2 / HER2 antibody [EP1045Y]
<b>Description</b>	Rabbit monoclonal [EP1045Y] to ErbB2 / HER2
<b>Host species</b>	Rabbit
<b>Specificity</b>	ab134182 detects ErbB 2 phosphorylated at Tyr1248 as well as unphosphorylated ErbB 2. Mouse species is recommended based on WB results, we do not guarantee IHC-P for mouse.
<b>Tested applications</b>	<b>Suitable for:</b> WB, IP, ICC/IF, IHC-P <b>Unsuitable for:</b> Flow Cyt
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Human
<b>Immunogen</b>	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: HeLa, SKBR-3, Wild-type HCT 116 and Wild-type A549 cell lysates; IHC-P: Human breast carcinoma tissue; ICC/IF: SKBR cells; IP: HeLa.
<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>Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.</p>

### 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>Dissociation constant (K<sub>D</sub>)</b>	K <sub>D</sub> = 3.00 x 10 <sup>-11</sup> M

10<sup>-11</sup>



[Learn more about K<sub>D</sub>](#)

<b>Storage buffer</b>	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol (glycerin, glycerine), 0.05% BSA, 59% PBS
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EP1045Y
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab134182 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. Predicted molecular weight: 137 kDa.
IP		1/30. <b>For unpurified use at 1/50.</b>
ICC/IF	★ ★ ★ ☆ ☆ (2)	1/250 - 1/500.
IHC-P	★ ★ ★ ★ ★ (1)	1/1600. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. <b>For unpurified use at 1/100 -1/250.</b>

**Application notes** Is unsuitable for Flow Cyt.

## Target

**Function** Protein tyrosine kinase that is part of several cell surface receptor complexes, but that apparently needs a coreceptor for ligand binding. Essential component of a neuregulin-receptor complex, although neuregulins do not interact with it alone. GP30 is a potential ligand for this receptor. Regulates outgrowth and stabilization of peripheral microtubules (MTs). Upon ERBB2 activation, the MEMO1-RHOA-DIAPH1 signaling pathway elicits the phosphorylation and thus the inhibition of GSK3B at cell membrane. This prevents the phosphorylation of APC and CLASP2, allowing its association with the cell membrane. In turn, membrane-bound APC allows the localization of MACF1 to the cell membrane, which is required for microtubule capture and stabilization. In the nucleus is involved in transcriptional regulation. Associates with the 5'-TCAAATTC-3' sequence in the PTGS2/COX-2 promoter and activates its transcription. Implicated in transcriptional activation of CDKN1A; the function involves STAT3 and SRC. Involved in the transcription of rRNA genes by RNA Pol I and enhances protein synthesis and cell growth.

**Tissue specificity** Expressed in a variety of tumor tissues including primary breast tumors and tumors from small bowel, esophagus, kidney and mouth.

**Involvement in disease** Hereditary diffuse gastric cancer

Glioma  
Ovarian cancer  
Lung cancer  
Gastric cancer  
Chromosomal aberrations involving ERBB2 may be a cause gastric cancer. Deletions within 17q12 region producing fusion transcripts with CDK12, leading to CDK12-ERBB2 fusion leading to truncated CDK12 protein not in-frame with ERBB2.

### Sequence similarities

Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily. Contains 1 protein kinase domain.

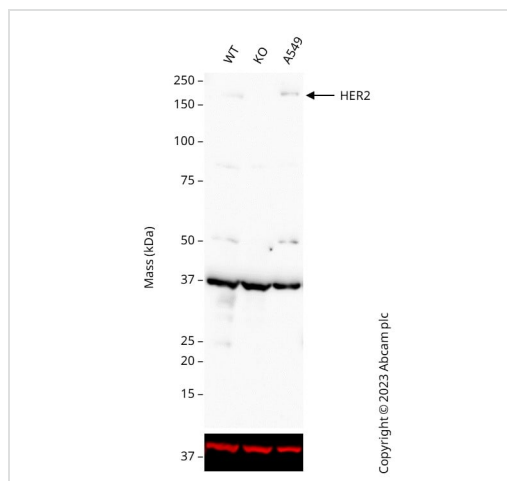
### Post-translational modifications

Autophosphorylated. Autophosphorylation occurs in trans, i.e. one subunit of the dimeric receptor phosphorylates tyrosine residues on the other subunit (Probable). Ligand-binding increases phosphorylation on tyrosine residues (PubMed:27134172). Signaling via SEMA4C promotes phosphorylation at Tyr-1248 (PubMed:17554007). Dephosphorylated by PTPN12 (PubMed:27134172).

### Cellular localization

Cytoplasm. Nucleus and Cell membrane. Cytoplasm, perinuclear region. Nucleus. Translocation to the nucleus requires endocytosis, probably endosomal sorting and is mediated by importin beta-1/KPNB1.

## Images



Western blot - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

**All lanes :** Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/500 dilution

**Lane 1 :** Wild-type MCF7 cell lysate at 32 µg

**Lane 2 :** ERBB2 knockout MCF7 cell lysate at 32 µg

**Lane 3 :** A549 cell lysate at 16 µg

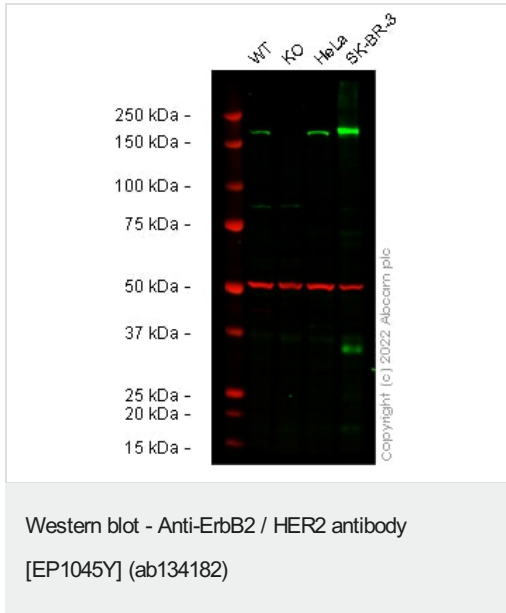
Performed under reducing conditions.

**Predicted band size:** 137 kDa

**Observed band size:** 180 kDa

Western blot: Anti-ErbB2 / HER2 antibody [EP1045Y] staining at 1/500 dilution, shown in black; Mouse anti-Alpha Tubulin [DM1A] ([ab7291](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab134182 was shown to bind specifically to ErbB2 / HER2. A band was observed at 180 kDa in wild-type MCF7 cell lysates with no signal observed at this size in ERBB2 knockout cell line [ab286260](#) (knockout cell lysate AB300208). To generate this image, wild-type and ERBB2 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<sup>®</sup> 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 and washed again four times. Secondary antibodies used were HRP conjugated Goat anti-Rabbit (H+L) and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution. This blot was developed with an ultra high-sensitivity ECL substrate kit and imaged with 20 minutes exposure time.



**All lanes :** Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/1000 dilution

**Lane 1 :** Wild-type A549 cell lysate

**Lane 2 :** ERBB2 knockout A549 cell lysate

**Lane 3 :** HeLa cell lysate

**Lane 4 :** SK-BR-3 cell lysate

Lysates/proteins at 20 µg per lane.

### Secondary

**All lanes :** Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

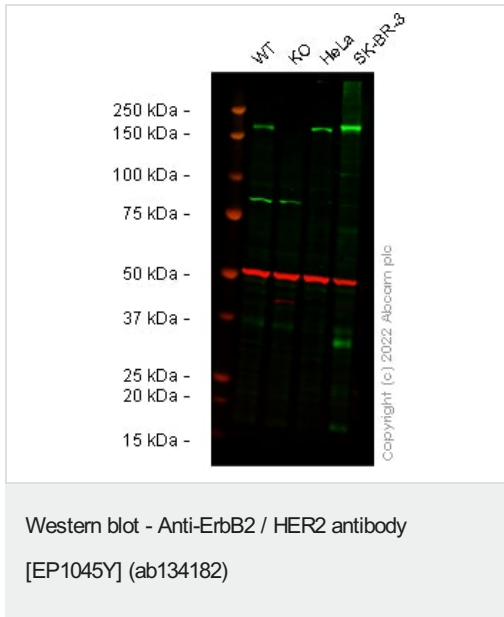
Performed under reducing conditions.

**Predicted band size:** 137 kDa

**Observed band size:** 180 kDa

False colour image of Western blot: Anti-ErbB2 / HER2 antibody [EP1045Y] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] ([ab7291](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab134182 was shown to bind specifically to ErbB2 / HER2. A band was observed at 180 kDa in wild-type A549 cell lysates with no signal observed at this size in ERBB2 knockout cell line. To generate this image, wild-type and ERBB2 knockout A549 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<sup>®</sup> 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 :** Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/1000 dilution

**Lane 1 :** Wild-type HCT 116 cell lysate

**Lane 2 :** ERBB2 knockout HCT 116 cell lysate

**Lane 3 :** HeLa cell lysate

**Lane 4 :** SK-BR-3 cell lysate

Lysates/proteins at 20 µg per lane.

### Secondary

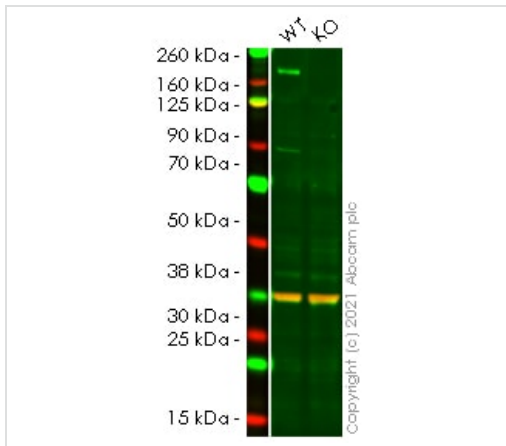
**All lanes :** Goat anti-Rabbit IgG H&L 800CW and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution

Performed under reducing conditions.

**Predicted band size:** 137 kDa

**Observed band size:** 180 kDa

False colour image of Western blot: Anti-ErbB2 / HER2 antibody [EP1045Y] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] ([ab7291](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab134182 was shown to bind specifically to ErbB2 / HER2. A band was observed at 180 kDa in wild-type HCT 116 cell lysates with no signal observed at this size in ERBB2 knockout cell line. To generate this image, wild-type and ERBB2 knockout HCT 116 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution 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.



Western blot - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

**All lanes :** Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/1000 dilution

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

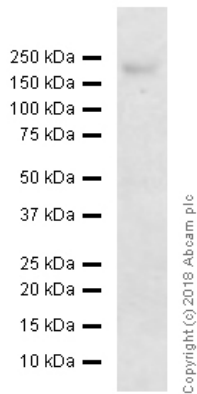
**Lane 2 :** ERBB2 knockout HeLa cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

**Predicted band size:** 137 kDa

False colour image of Western blot: Anti-ErbB2 / HER2 antibody [EP1045Y] staining at 1/1000 dilution, shown in green; Mouse anti-GAPDH antibody [6C5] ([ab8245](#)) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab134182 was shown to bind specifically to ErbB2 / HER2. A band was observed at 180 kDa in wild-type HeLa cell lysates with no signal observed at this size in ERBB2 knockout cell line [ab255387](#) (knockout cell lysate [ab263758](#)). To generate this image, wild-type and ERBB2 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<sup>®</sup> 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 (IRDye<sup>®</sup> 800CW) preabsorbed ([ab216773](#)) and Goat anti-Mouse IgG H&L (IRDye<sup>®</sup> 680RD) preabsorbed ([ab216776](#)) at 1/20000 dilution.



Western blot - Anti-ErbB2 / HER2 antibody  
[EP1045Y] (ab134182)

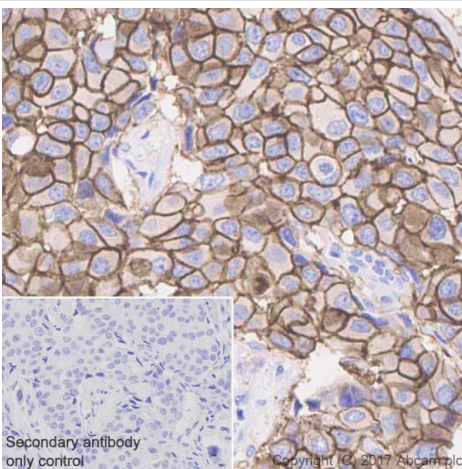
Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/1000 dilution + 4T1(Mouse mammary gland carcinoma epithelial cell) whole cell lysate at 20  $\mu$ g

### Secondary

Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

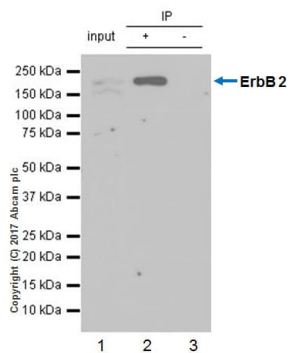
**Predicted band size:** 137 kDa

**Observed band size:** 180 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody  
[EP1045Y] (ab134182)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human breast carcinoma tissue sections labeling EErB2 / HER2 with Purified ab134182 at 1:1600 dilution (0.68  $\mu$ g/ml). Heat mediated antigen retrieval was performed using [ab93684](#) (Tris/EDTA buffer, pH 9.0). Tissue was counterstained with Hematoxylin. ImmunoHistoProbe one step HRP Polymer (ready to use) secondary antibody was used at 1:0 dilution. PBS instead of the primary antibody was used as the negative control.



Immunoprecipitation - Anti-ErbB2 / HER2 antibody  
[EP1045Y] (ab134182)

ab134182 (purified) at 1:30 dilution (2µg) immunoprecipitating ErbB2 / HER2 in HeLa whole cell lysate.

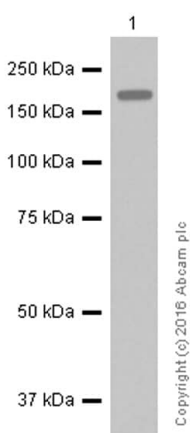
Lane 1 (input): HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysate 10µg

Lane 2 (+): ab134182 & HeLa whole cell lysate

Lane 3 (-): Rabbit monoclonal IgG (**ab172730**) instead of ab134182 in HeLa whole cell lysate

For western blotting, VeriBlot for IP Detection Reagent (HRP) (**ab131366**) was used for detection at 1:1000 dilution.

Blocking and diluting buffer: 5% NFDm/TBST.



Western blot - Anti-ErbB2 / HER2 antibody  
[EP1045Y] (ab134182)

Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/10000 dilution (purified) + SK-BR-3 (Human breast adenocarcinoma epithelial cell) whole cell lysates at 15 µg

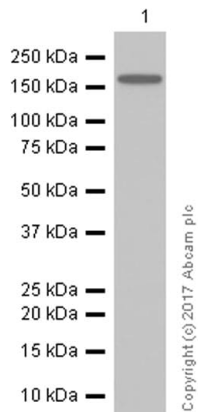
### Secondary

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

**Predicted band size:** 137 kDa

Blocking and diluting buffer : 5% NFDm/TBST





Western blot - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

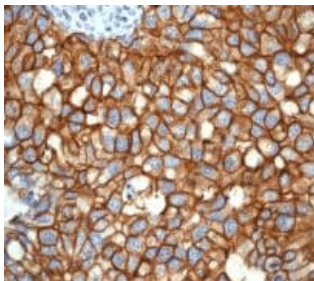
Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/1000 dilution (purified) + HeLa (Human cervix adenocarcinoma epithelial cell) whole cell lysates at 15 µg

### Secondary

Goat Anti-Rabbit IgG H&L (HRP) ([ab97051](#)) at 1/20000 dilution

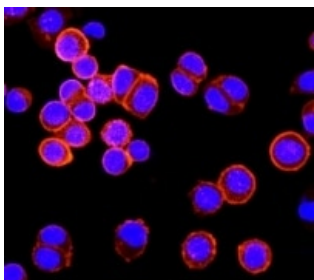
**Predicted band size:** 137 kDa

Blocking and diluting buffer : 5% NFDm/TBST



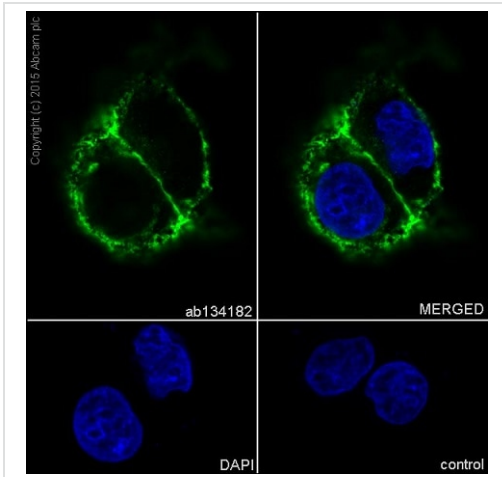
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

Immunohistochemical analysis of paraffin-embedded Human breast carcinoma tissue labelling ErbB2 / HER2 with ab134182 at 1/100 dilution. Heat mediated antigen retrieval was performed using Tris/EDTA buffer, pH 9.0).



Immunocytochemistry/ Immunofluorescence - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

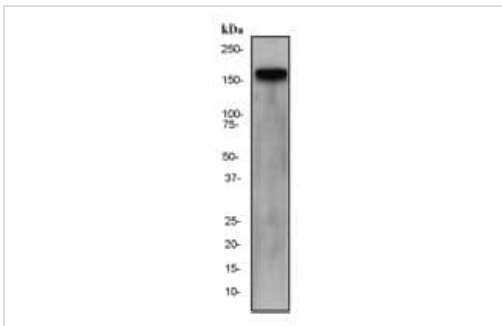
Immunofluorescent analysis of SKBR cells labelling ErbB2 / HER2 with ab134182 at 1/250 dilution.



Immunocytochemistry/ Immunofluorescence - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

Immunocytochemistry/Immunofluorescence analysis of SK-BR-3 (human mammary gland adenocarcinoma) labelling ErbB2 / HER2 with purified ab134182 at 1/125. Cells were fixed with 4% PFA and permeabilized with 0.1% Triton X-100. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody (Ab150077). Nuclei counterstained with DAPI (blue).

Control: PBS only



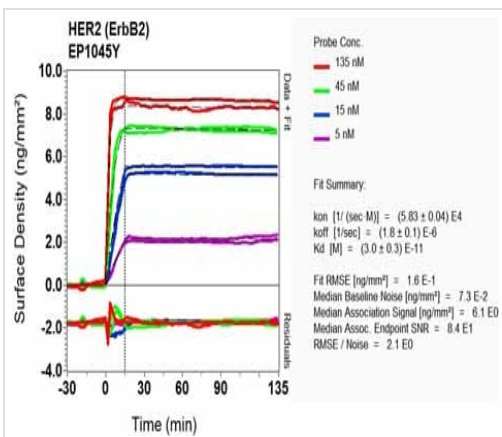
Western blot - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182) at 1/10000 dilution + SKBR-3 cell lysate at 10 µg

**Secondary**

HRP labelled goat anti-rabbit at 1/2000 dilution

**Predicted band size:** 137 kDa







OIR-D Scanning - Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

Equilibrium dissociation constant ( $K_D$ )

Learn more about  $K_D$

[Click here to learn more about  \$K\_D\$](#)

Why choose a recombinant antibody?

 <b>Research with confidence</b> Consistent and reproducible results	 <b>Long-term and scalable supply</b> Recombinant technology
 <b>Success from the first experiment</b> Confirmed specificity	 <b>Ethical standards compliant</b> Animal-free production

Anti-ErbB2 / HER2 antibody [EP1045Y] (ab134182)

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

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- Extensive multi-media technical resources to help you
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