abcam

ab237715

Anti-ErbB2 / HER2 antibody [CAL27]

Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) is a rabbit monoclonal antibody detecting ErbB2 / HER2 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.5 Preservative: 0.05% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	CAL27
Purification technique	Affinity purification Protein A
Concentration	0.519 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purity >99%.

Reactivity data

IP

Tested

Species	Human
Dilution info	1/13
Notes	-

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Species	Human
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

IHC-P

Tested

Species	Mouse
Dilution info	1/2000
Notes	ERBB2 is expressed at very low or undetectable levels in normal human breast tissue, and only a subset of breast cancer cases are ERBB2-positive. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/2000
Notes	ERBB2 is expressed at very low or undetectable levels in normal human breast tissue, and only a subset of breast cancer cases are ERBB2-positive. Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

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

Target data

See full target information ERBB2

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.

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

What is this antibody validated in?

Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P),

Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of ErbB2 / HER2?
Anti-ErbB2 / HER2 [CAL27] (ab237715) specifically detects a band for ErbB2 / HER2 (UniProt: P04626) at a molecular weight of 137kDa.

Specificity confirmed
The specificity of Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) has been confirmed by Western blot testing in ERBB2 Knockout HCT 116 cells.

Other related products
We have a range of other formats of antibody clone [CAL27] also available for your convenience: ab237715, Carrier free - ab251602

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The ErbB2 also known as HER2 or HER2 protein is a transmembrane receptor protein with a molecular weight of about 185 kDa. It serves as part of the epidermal growth factor receptor (EGFR) family of receptor tyrosine kinases. The ErbB2 protein is expressed mainly in epithelial tissues including those of the breast and the gastrointestinal tract. It lacks a known ligand-binding domain which sets it apart from other members of its family. Due to its structure ErbB2 dimerizes with other members of the EGFR family to exert its effects in cellular signaling.
Biological function summary	The role of ErbB2 extends beyond a singular function. It becomes an active component when forming heterodimers with other EGFR family members such as ErbB3 to initiate various downstream signaling cascades. The dimerization activates intracellular pathways leading to cell proliferation survival differentiation and migration. Within cells ErbB2 influences processes critical for normal development and tissue homeostasis contributing significantly to signal transduction networks.
Pathways	ErbB2 plays a pivotal role in pathways such as the PI3K/Akt and MAPK/ERK pathways. These pathways are important in mediating cellular responses to growth signals. The PI3K/Akt pathway activated by HER2 signaling regulates cell growth and survival while the MAPK/ERK pathway contributes to cell differentiation and proliferation. ErbB2's interaction with proteins like ErbB3 is fundamental in these pathways increasing the amplitude and diversity of downstream signals.
Associated diseases and disorders	ErbB2 is significantly associated with breast cancer and gastric cancer. The overexpression or gene amplification of HER2 is observed in approximately 20% of breast cancer cases correlating with aggressive tumor growth and poor prognosis. ErbB2-related signaling contributes to oncogenic processes by promoting excessive cell proliferation. Targeting ErbB2 in these cancers is common using

therapies such as monoclonal antibodies like trastuzumab. In the context of gastric cancer the role of ErbB2 mirrors its function in breast cancer and targeting HER2 holds therapeutic potential.

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

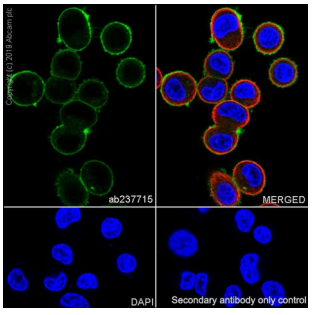
We do not recommend this combination. It is not covered by our product promise.

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.

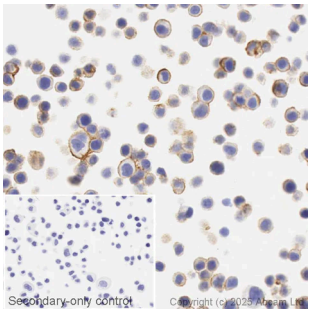
14 product images



Immunocytochemistry/ Immunofluorescence - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

ErbB2 / HER2 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ErbB2 / HER2 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilised SK-BR-3 (human mammary gland adenocarcinoma cell line) cells labeling ERbB 2 with ab237715 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membranous staining in SK-BR-3 cell line. The nuclear counter stain 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, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.



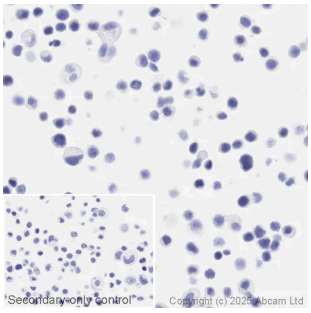
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

IHC image of ErbB2 / HER2 staining in a section of formalin-fixed paraffin-embedded MCF7 cell pellet performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab237715, 1/200 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

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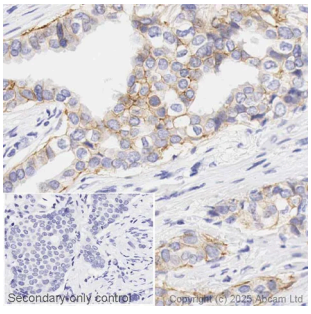
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

Negative control image: IHC image of ErbB2 / HER2 staining in a section of formalin-fixed paraffin-embedded MCF7 ErbB2 / HER2 KO cell pellet performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab237715, 1/200 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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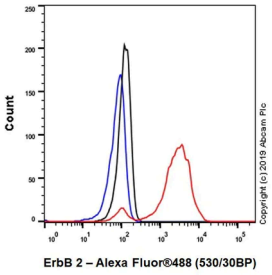


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

IHC image of ErbB2 / HER2 staining in a section of formalin-fixed paraffin-embedded normal human breast cancer* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20mins. The section was then incubated with ab237715, 1/200 dilution, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

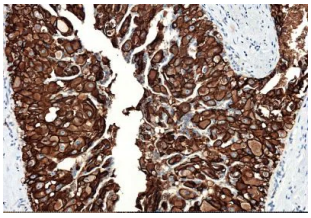
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Flow Cytometry (Intracellular) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

ErbB2 / HER2 Flow Cytometry (Intracellular) staining using rabbit Anti-ErbB2 / HER2 antibody

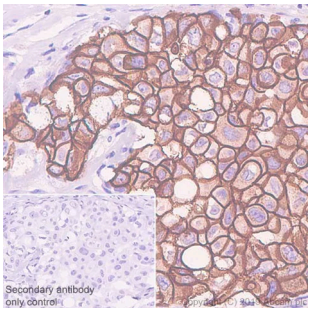
Intracellular flow cytometric analysis of4% paraformaldehyde-fixed, 90% methonao-permeabilized SH-BR-3 (human mammary gland adenocarcinoma cell line) cells labeling ErbB2 / HER2 with ab237715 at 1/500 dilution (red) compared with Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue).
Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

ErbB2 / HER2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ErbB2 / HER2 antibody

Formalin-fixed, paraffin-embedded human breast carcinoma tissue stained for ErbB2 / HER2 using ab237715 at 0.3 µg/ml in immunohistochemical analysis.



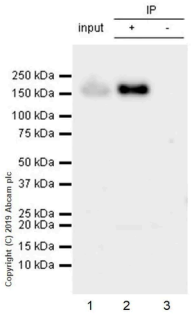
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

Immunohistochemical analysis of human breast carcinoma tissue labeling ErbB2 / HER2 with ab237715 at 1/2000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the human breast carcinoma is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.

The section was incubated with ab237715 for 10 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Immunoprecipitation - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

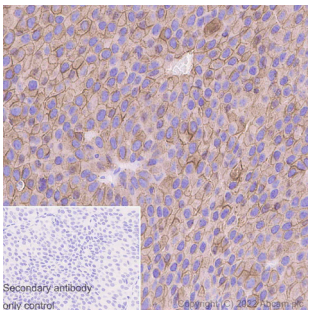
ERbB 2 was immunoprecipitated from 0.35 mg of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab237715 at 130 dilution. Western blot was performed from the immunoprecipitate using ab237715 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used as secondary antibody at 1/5000 dilution.
Lane 1: HeLa whole cell lysate 10 µg (Input).
Lane 2: ab237715 IP in HeLa whole lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab237715 in HeLa whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 15 seconds.

All lanes:
Immunoprecipitation - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

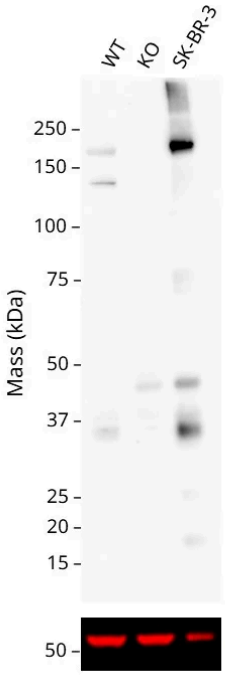
Predicted band size: 137 kDa

Observed band size: 180 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

Immunohistochemical analysis of mouse breast carcinoma tissue labeling ErbB2 / HER2 with ab237715 at 1/2000 dilution, followed by Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on the human breast carcinoma is observed. Counter stained with hematoxylin. Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins. The section was incubated with ab237715 for 10 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

ErbB2 / HER2 Western blot staining using rabbit Anti-ErbB2 / HER2 antibody

Anti-ErbB2 / HER2 antibody [CAL27] staining at 1/500 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab237715 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® 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 HRP conjugated Goat anti-Rabbit (H+L) and Goat anti-Mouse IgG H&L 680RD at 1/20000 dilution.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) 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:
SK-BR-3 cell lysate at 16 µg

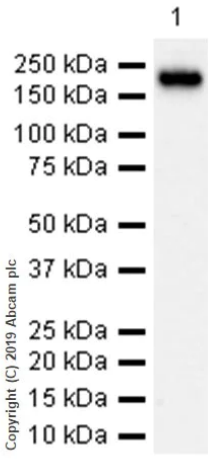
Secondary

All lanes:
HRP conjugated Goat anti-Rabbit (H+L) 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



Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

ErbB2 / HER2 Western blot staining of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate using rabbit Anti-ErbB2 / HER2 antibody

Blocking and dilution buffer: 5% NFDM/TBST.
This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) at 1/1000 dilution

All lanes:
HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

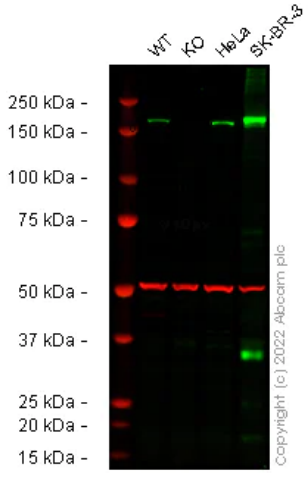
Secondary

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

Predicted band size: 137 kDa

Observed band size: 180 kDa

Exposure time: 3min



Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

False colour image of Western blot: Anti-ErbB2 / HER2 antibody [CAL27] 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, ab237715 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® 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-ErbB2 / HER2 antibody [CAL27] (ab237715) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysate at 20 µg

Lane 2:
ERBB2 knockout A549 cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
SK-BR-3 cell lysate at 20 µg

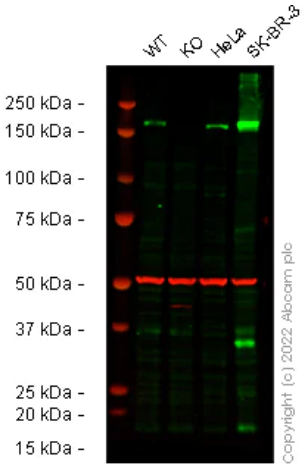
Secondary

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



Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

False colour image of Western blot: Anti-ErbB2 / HER2 antibody [CAL27] 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, ab237715 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.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) at 1/1000 dilution

Lane 1:
Wild-type HCT 116 cell lysate at 20 µg

Lane 2:
ERBB2 knockout HCT 116 cell lysate at 20 µg

Lane 3:
HeLa cell lysate at 20 µg

Lane 4:
SK-BR-3 cell lysate at 20 µg

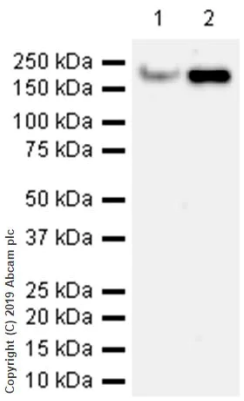
Secondary

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



Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715)

Blocking and dilution buffer: 5% NFDM/TBST.
This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [CAL27] (ab237715) at 1/1000 dilution

Lane 1:
4T1 (mouse mammary gland carcinoma cell line) whole cell lysate at 20 µg

Lane 2:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Predicted band size: 137 kDa

Observed band size: 180 kDa

Exposure time: 3min

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