abcam

ab222482

Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free

Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482) is a rabbit recombinant monoclonal antibody for **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF, ELISA**. Suitable for **Human, Mouse, Rat**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR19547-12
Purification technique	Affinity purification Protein A
Specificity	Only reacts with weakly in mouse 4T1 cells. This antibody could recognize ErbB2 and weak cross reaction with ErbB4. Mouse and rat species are recommended based on WB results, we do not guarantee IHC-P for mouse and rat.
Concentration	0.969 - 1.01 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

I-ELISA

Tested

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Notes	-

Not recommended

Species	Recombinant full length protein - Human, Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human, Mouse, Rat, Human
Dilution info	-
Notes	-

Not recommended

Species	Recombinant full length protein - Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Recombinant full length protein - Human, Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Not recommended

Species	Recombinant full length protein - Human, Recombinant fragment - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
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.

Expected

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

Not recommended

Species	Recombinant full length protein - Human, Recombinant fragment - Human
Dilution info	-
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	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

What is this antibody validated in?
Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), ELISA in Human, Mouse, Rat samples.

What is the molecular weight of ErbB2 / HER2?
Anti-ErbB2 / HER2 [EPR19547-12] - BSA and Azide free (ab222482) specifically detects a band for ErbB2 / HER2 (UniProt: P04626) at a molecular weight of 137kDa.

Other related products
We have a range of other formats of antibody clone [EPR19547-12] also available for your convenience: ab214275, Carrier free - ab222482, PE - ab225508, Alexa Fluor® 488 - ab225509, Alexa Fluor® 647 - ab225510

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

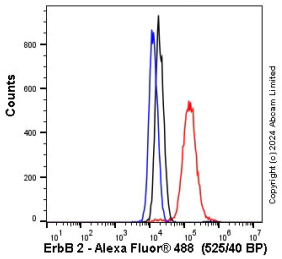
We do not recommend this combination. It is not covered by our product promise.

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:

13 product images



Flow Cytometry (Intracellular) - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

ErbB2 / HER2 Flow Cytometry (Intracellular) staining of T-47D cells using rabbit Anti-ErbB2 / HER2 antibody

Flow cytometry overlay histogram showing T-47D cells stained with ab214275 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilised with 0.1% PBS-Triton X-100 for 15 min. The cells were incubated in 1x PBS containing 10% normal goat serum to block non-specific protein-protein interaction followed by the antibody (ab214275) (1x 10^6 in 100µl at a 1/2500 dilution for 30 min at 22° C.

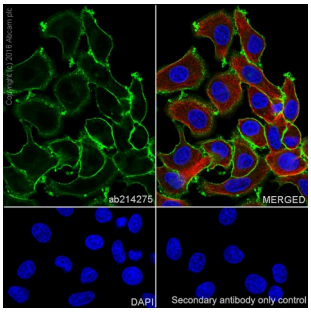
The secondary antibody Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed was incubated at a 1/4000 dilution for 30 min at 22° C.

Isotype control antibody was (black line) ab172730 Recombinant Rabbit IgG, monoclonal [EPR25A] - Isotype Control used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

Acquisition of >5000 events were collected using a 50 mW blue laser (488nm) and 525/40 bandpass filter.

This antibody gave a positive signal in T-47D fixed with 80% methanol (5 min) / permeabilised with 0.1% PBS-Triton X-100 for 15 min under the same conditions.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).



Immunocytochemistry/ Immunofluorescence - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

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

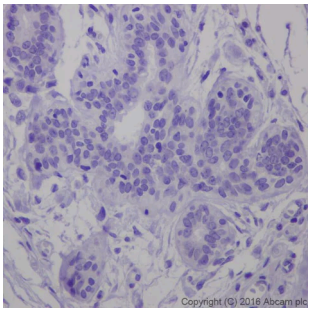
Immunofluorescent analysis of 100% methanol-fixed SK-BR-3 (Human mammary gland adenocarcinoma cell line) cells labeling ErbB2 / HER2 with ab214275 at 1/250 dilution, followed by Goat Anti-Rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing membrane staining on SK-BR-3 cells.

The nuclear counterstain is DAPI (blue).

Tubulin is detected with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (red).

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

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

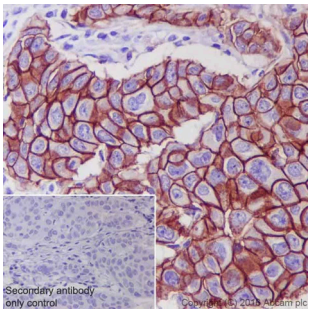
ErbB2 / HER2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ErbB2 / HER2 antibody

Immunohistochemical analysis of paraffin-embedded Human breast tissue labeling ErbB2 / HER2 with ab214275 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Negative control: No staining on normal Human breast [PMID: 15150568].

Counter stained with Hematoxylin.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).

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



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

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

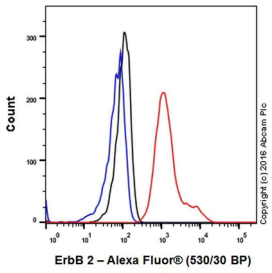
Immunohistochemical analysis of paraffin-embedded Human breast cancer tissue labeling ErbB2 / HER2 with ab214275 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Membrane staining on Human breast cancer is observed [PMID: 18437174].

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).

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

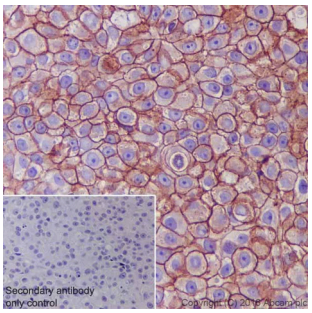


Flow Cytometry (Intracellular) - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed SK-BR-3 (Human mammary gland adenocarcinoma cell line) cells labeling ErbB2 / HER2 with ab214275 at 1/60 dilution (red) compared with a RabbitIgG,monoclonal [EPR25A] - Isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (blue). Goat anti Rabbit IgG (Alexa Fluor® 488) at 1/2000 dilution was used as the secondary antibody.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

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

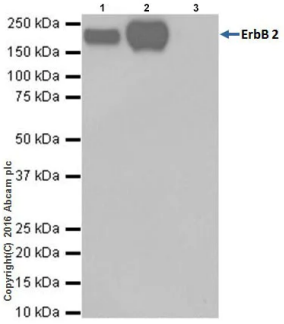
Immunohistochemical analysis of paraffin-embedded Human breast cancer tissue labeling ErbB 2 with ab214275 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.
Membrane staining on Human breast cancer is observed [PMID: 18437174].

Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ab97051 at 1/500 dilution.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).

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



Immunoprecipitation - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

ErbB2 / HER2 was immunoprecipitated from 0.35 mg of HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab214275 at 1/30 dilution.
Western blot was performed from the immunoprecipitate using ab214275 at 1/1000 dilution.

VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/1000 dilution.

Lane 1: HeLa whole cell lysate 10µg (Input).

Lane 2: ab214275 IP in HeLa whole cell lysate.

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab214275 in HeLa whole cell lysate.

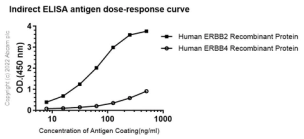
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 seconds.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab214275).

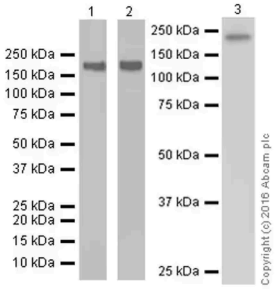
All lanes:
Immunoprecipitation - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275)

Predicted band size: 137 kDa



Indirect ELISA - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

This data was developed using the same antibody clone in a different buffer formulation (ab222482).
ELISA using ab214275 at using 1000 ng/ml an antigen concentration range of 500-0 ng/ml for Human ERBB2 and ERBB4 Recombinant Proteins. Goat Anti-Rabbit IgG (HRL) (1/50000) was used as the secondary antibody. 3,3',5,5'-Tetramethylbenzidine (TMB) used as substrate solution.



Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

This data was developed using the same antibody clone in a different buffer formulation (ab214275). Blocking/Dilution buffer: 5% NFDM/TBST. Exposure time: Lane 1: 3 minutes; Lane 2: 3 seconds; Lane 3: 10 seconds. The molecular weight observed is consistent with the literature PMID :15741050.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275) at 1/1000 dilution

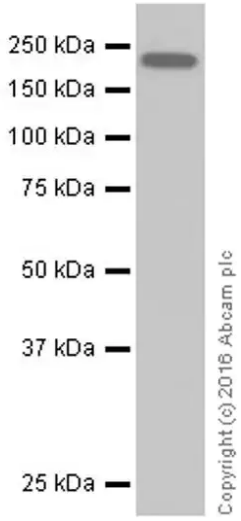
Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
Sample: A431 (Human epidermoid carcinoma cell line) whole cell lysate at 20 µg

Lane 3:
SK-BR-3 (Human mammary gland adenocarcinoma cell line) whole cell lysate at 20 µg

Secondary

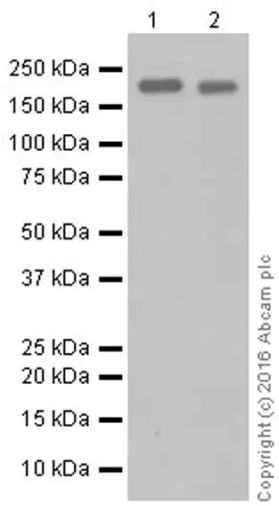
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution



Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

This data was developed using the same antibody clone in a different buffer formulation (ab214275). Blocking/Dilution buffer: 5% NFDM/TBST. The molecular weight is consist with literature PMID :15741050.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275) at 1/2000 dilution

All lanes:
Human breast cancer lysate at 10 µg



Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

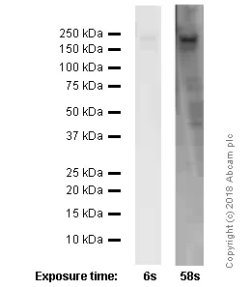
This data was developed using the same antibody clone in a different buffer formulation (ab214275). Blocking/Dilution buffer: 5% NFDM/TBST. The molecular weight is consist with literature PMID :15741050.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275) at 10 µg

Lane 1:
C6 (Rat glial tumor cell line) whole cell lysate at 10 µg

Lane 2:
PC-12 (Rat adrenal gland pheochromocytoma cell line) whole cell lysate at 10 µg

Secondary

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



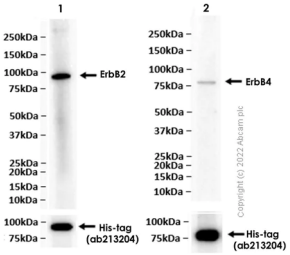
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

This data was developed using the same antibody clone in a different buffer formulation (ab214275). Blocking and diluting buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275)

All lanes:
4T1 (Mouse mammary gland carcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

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



Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482)

This data was developed using the same antibody clone in a different buffer formulation (ab222482). Blocking and dilution buffer and concentration: 5% NFDM/TBST. Exposure time: 180 seconds. This antibody could recognize ErbB2 and weak cross reaction with ErbB4.
Lanes 1 - 2:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] (ab214275) at 1/1000 dilution

Lanes 1 - 2:
Western blot - Anti-ErbB2 / HER2 antibody [EPR19547-12] - BSA and Azide free (ab222482) at 1/1000 dilution

Lane 1:
His-tagged Recombinant Human ErbB2 protein (aa676-1255)

Lane 2:
His-tagged Recombinant Human ErbB4 protein (aa676-1308)

Secondary

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

Predicted band size: 137 kDa

Observed band size: 90 kDa, 80 kDa

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