abcam

ab167610

Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free

Recombinant | RabMAb | Advanced Validation

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR4097
Purification technique	Affinity purification Protein A
Specificity	Expression levels of ER alpha protein vary with sample type.
Concentration	1.047 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human

Dilution info	-
Notes	-

WB

Tested

Species	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.

IHC-Fr

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information ESR1

Function	Nuclear hormone receptor. The steroid hormones and their receptors are involved in the regulation of eukaryotic gene expression and affect cellular proliferation and differentiation in target tissues. Ligand-dependent nuclear transactivation involves either direct homodimer binding to a palindromic estrogen response element (ERE) sequence or association with other DNA-binding transcription factors, such as AP-1/c-Jun, c-Fos, ATF-2, Sp1 and Sp3, to mediate ERE-independent signaling. Ligand binding induces a conformational change allowing subsequent or combinatorial association with multiprotein coactivator complexes through LXXLL motifs of their respective components. Mutual transrepression occurs between the estrogen receptor (ER) and NF-kappa-B in a cell-type specific manner. Decreases NF-kappa-B DNA-binding activity and inhibits NF-kappa-B-mediated transcription from the IL6 promoter and displace RELA/p65 and associated coregulators from the promoter. Recruited to the NF-kappa-B response element of the CCL2 and IL8 promoters and can displace CREBBP. Present with NF-kappa-B components RELA/p65 and NFKB1/p50 on ERE sequences. Can also act synergistically with NF-kappa-B to activate transcription involving respective recruitment adjacent response elements; the function involves CREBBP. Can activate the transcriptional activity of TFF1. Also mediates membrane-initiated estrogen signaling involving various kinase cascades. Essential for MTA1-mediated transcriptional regulation of BRCA1 and BCAS3 (PubMed:17922032). Maintains neuronal survival in response to ischemic reperfusion injury when in the presence of circulating estradiol (17-beta-estradiol/E2) (By similarity). Isoform 3. Involved in activation of NOS3 and endothelial nitric oxide production (PubMed:21937726). Isoforms lacking one or several functional domains are thought to modulate transcriptional activity by competitive ligand or DNA binding and/or heterodimerization with the full-length receptor (PubMed:10970861). Binds to ERE and inhibits isoform 1 (PubMed:10970861).

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

ab167610 is the carrier-free version of ab108398.

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.

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	Estrogen Receptor alpha also known as ERα or ESR1 is a nuclear receptor that acts as a transcription factor when activated by its ligand estrogen. Its molecular weight is approximately 66 kDa. ERα is expressed in various tissues such as breast tissue endometrium and ovarian cells as well as some areas of the central nervous system. The ERα protein binds to specific DNA sequences called estrogen response elements to regulate the transcription of target genes. Tools like ER alpha ELISA and assays using alpha peptides help to study this receptor.
Biological function summary	ERα plays a significant role in the regulation of estrogen signaling. Estrogens binding to ERα activate the receptor which can form a homodimer or heterodimer complex with other proteins like coactivators or corepressors. This complex then modulates the transcription of genes involved in cell growth proliferation and differentiation. ERα is closely linked with processes like reproductive tissue development and maintenance.
Pathways	ERα is involved in the estrogen signaling pathway and the cell cycle regulation pathway. In the estrogen signaling pathway ERα works together with proteins such as coactivators which enhance gene transcription and corepressors which can inhibit transcription. In the context of cell cycle regulation ERα's interactions with other cell cycle proteins help control cell division and proliferation linking ERα activity to the progression through different stages of the cell cycle.
Associated diseases and disorders	ERα's dysregulation has been implicated in breast cancer and osteoporosis. ERα overexpression or mutations can lead to oncogenic effects in breast cancer making

it a prominent therapeutic target. Drugs that modulate ERα activity like selective estrogen receptor modulators (SERMs) are used in breast cancer treatment. In osteoporosis ERα is related to bone density regulation with its activity affecting bone resorption and formation. Relationships between ERα and other proteins such as those involved in hormone signaling pathways impact these disease mechanisms.

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

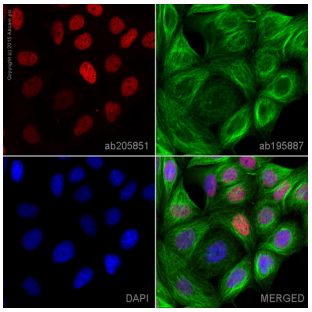
We do not recommend this combination. It is not covered by our product promise.

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.

15 product images



Immunocytochemistry/ Immunofluorescence - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

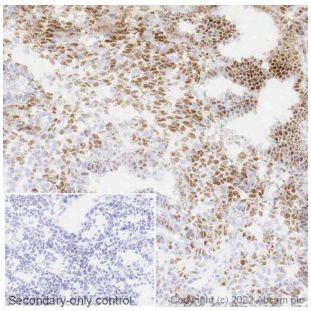
Estrogen Receptor alpha Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Estrogen Receptor alpha antibody

Clone EPR4097 (ab167610) has been successfully conjugated by Abcam. This image was generated using Anti-Estrogen Receptor alpha antibody [EPR4097] (Alexa Fluor® 647). Please refer to ab205851 for protocol details.
ab205851 staining Estrogen Receptor alpha in MCF7 cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab205851 at a 1/50 dilution (shown in red) and ab195887, Mouse

monoclonal to alpha Tubulin (Alexa Fluor® 488), at a 1/250 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

This product also gave a positive signal under the same testing conditions in MCF7 cells fixed with 100% methanol (5 min)

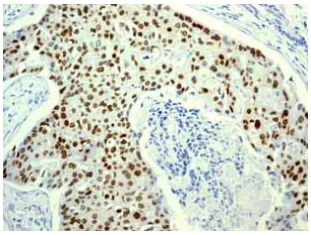


Immunohistochemistry (Frozen sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398). IHC image of Estrogen Receptor alpha staining in a section of frozen human uterus* performed on a Leica Biosystems BOND® RX instrument using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab108398, 5 ug/ml, 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.

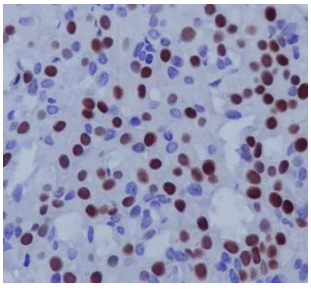
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast ductal infiltrating carcinoma tissue labelling Estrogen Receptor alpha with unpurified ab108398.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).

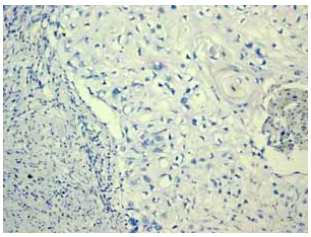


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human breast tissue labelling Estrogen Receptor alpha with purified ab108398 at 1/250. Heat mediated

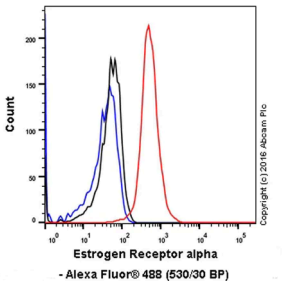
antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Counterstained with Hematoxylin. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of human cervical carcinoma tissue. Unpurified ab108398 shows negative staining.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



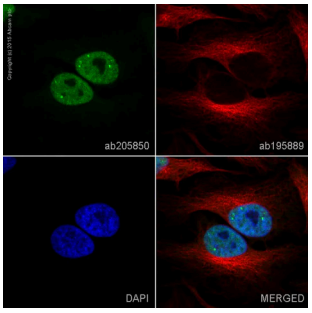
Flow Cytometry (Intracellular) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Flow Cytometry (Intracellular) staining using rabbit Anti-Estrogen Receptor alpha antibody

ab108398 staining Estrogen Receptor alpha in the human cell line MCF-7 (human breast carcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde, permeabilized with 90% methanol and the sample was incubated with the primary antibody at a dilution of 1/20. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).

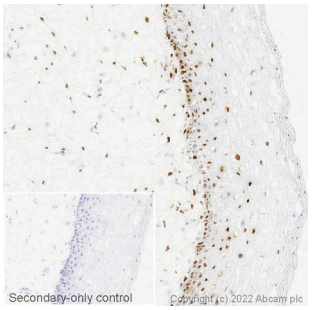


Immunocytochemistry/ Immunofluorescence - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Estrogen Receptor alpha antibody

Clone EPR4097 (ab167610) has been successfully conjugated by Abcam. This image was generated using Anti-Estrogen Receptor alpha antibody [EPR4097] (Alexa Fluor® 488). Please refer to ab205850 for protocol details.
ab205850 staining Estrogen Receptor alpha in HeLa cells. The cells were fixed with 4% formaldehyde (10 min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab205850 at 1/100 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at 1/250 dilution (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).

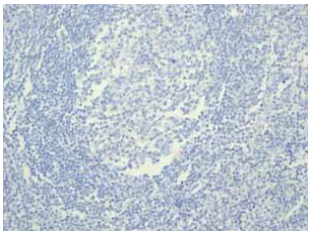
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Frozen sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Frozen sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

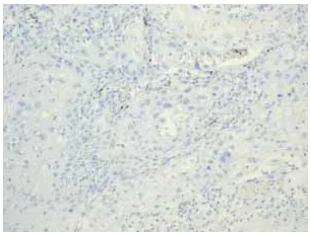
IHC image of Estrogen Receptor alpha staining in a section of frozen human cervix* performed on a Leica Biosystems BOND® RX instrumen using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with ab108398, 5 ug/ml, for 15 mins at 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. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

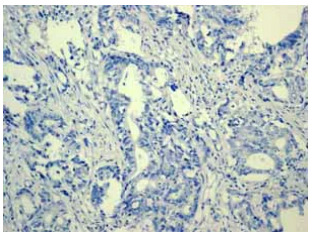
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of human normal tonsil tissue. Unpurified ab108398 shows negative staining.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

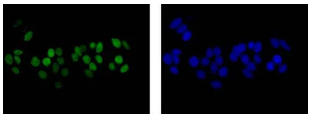
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of human lung adenocarcinoma tissue. Unpurified ab108398 shows negative staining.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

Estrogen Receptor alpha Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha antibody

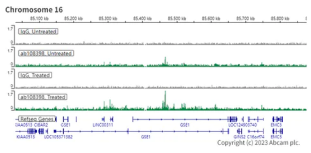
Immunohistochemistry (Formalin/PFA-fixed parffin-embedded sections) analysis of human colonic adenocarcinoma tissue. Unpurified ab108398 shows negative staining.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



Immunocytochemistry/ Immunofluorescence - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

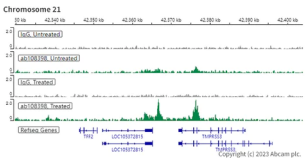
Estrogen Receptor alpha Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Estrogen Receptor alpha antibody

Immunocytochemsitry/Immunofluorescence analysis of MCF-7 cells labelling Estrogen Receptor alpha (green) with purified ab108398 at 1/200. Cells were fixed with 4% paraformaldehyde. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/200) was used as the secondary antibody. Counterstained with DAPI (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab108398).



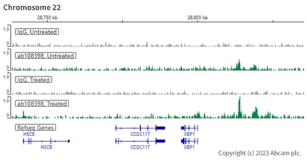
ChIC/CUT&RUN sequencing - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

"This data was developed using the same antibody clone in a different buffer formulation (ab108398). ChIC/CUT&RUN was performed using a pAG-MNase at a final concentration of 700 ng/mL, 2.5 x 10^5 MCF7 (Human breast adenocarcinoma epithelial cell) cells treated with phenol red free medium and 5% charcoal stripped FBS for 3 days than treated with β-estradiol (10 nM 45 min) and 5 µg of ab108398 [EPR4097]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods."



ChIC/CUT&RUN sequencing - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

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ChIC/CUT&RUN sequencing - Anti-Estrogen Receptor alpha antibody [EPR4097] - BSA and Azide free (ab167610)

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