abcam

ab205851

Alexa Fluor® 647 Anti-Estrogen Receptor alpha antibody [EPR4097]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR4097
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/50
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	This product gave a positive signal in MCF7 cells fixed with 4% formaldehyde (10 min) and 100% methanol (5 min).

Flow Cyt (Intra)

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
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 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, Store in the dark

Notes

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.

Alexa Fluor® is a registered trademark of Molecular Probes, Inc, a Thermo Fisher Scientific Company. The Alexa Fluor® dye included in this product is provided under an intellectual property license from Life Technologies Corporation. As this product contains the Alexa Fluor® dye, the purchase of this product conveys to the buyer the non-transferable right to use the purchased product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). As this product contains the Alexa Fluor® dye the

sale of this product is expressly conditioned on the buyer not using the product or its components, or any materials made using the product or its components, in any activity to generate revenue, which may include, but is not limited to use of the product or its components: in manufacturing; (ii) to provide a service, information, or data in return for payment (iii) for therapeutic, diagnostic or prophylactic purposes; or (iv) for resale, regardless of whether they are sold for use in research. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.

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.

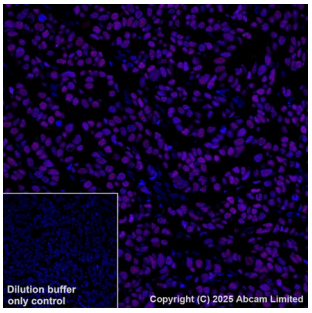
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

3 product images

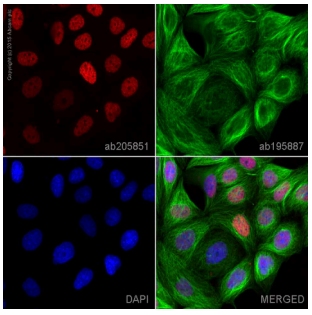


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Estrogen Receptor alpha antibody [EPR4097] (ab205851)

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

Immunohistochemical analysis of paraffin-embedded human breast cancer labeling Estrogen Receptor alpha with ab205851 at 1/50 (10 ug/ml) dilution.

Nuclear staining on human breast cancer. The primary antibody was incubated overnight at 4°C (shown in magenta). Nuclear DNA was labelled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

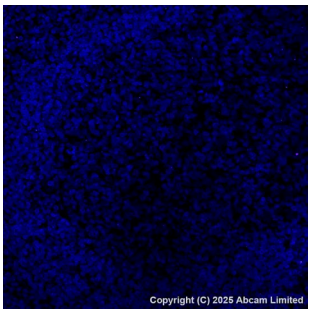


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-Estrogen Receptor alpha antibody [EPR4097] (ab205851)

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

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 (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Estrogen Receptor alpha antibody [EPR4097] (ab205851)

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

Immunohistochemical analysis of paraffin-embedded human tonsil labeling Estrogen Receptor alpha with ab205851 at 1/50 (10 ug/ml) dilution.

Negative control: no staining on human tonsil. The primary antibody was incubated overnight at 4°C (shown in magenta). Nuclear DNA was labelled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

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