abcam

ab282199

Alexa Fluor® 555 Anti-Estrogen Receptor alpha antibody [SP1]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 555
Excitation/Emission	Ex: 555nm, Em: 565nm
Storage buffer	pH: 7.2 - 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	SP1
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	1/100
Notes	-

Flow Cyt (Intra)

Expected

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

ICC/IF

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.

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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.

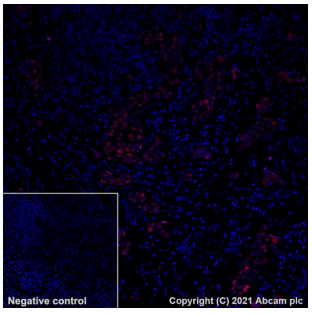
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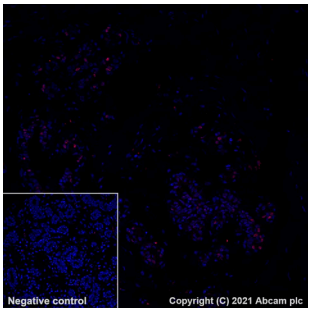
2 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 555 Anti-Estrogen Receptor alpha antibody [SP1] (ab282199)

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

Immunohistochemical analysis of paraffin-embedded human breast cancer tissue labelling Estrogen Receptor alpha with ab282199 at 1/100 dilution (5.0 µg/ml). Nuclear staining on human breast cancer. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab282199 at 1/100 dilution (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).
Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 555 Anti-Estrogen Receptor alpha antibody [SP1] (ab282199)

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

Immunohistochemical analysis of paraffin-embedded human breast tissue labelling Estrogen Receptor alpha with ab282199 at 1/100 dilution (5.0 µg/ml). Nuclear staining on human breast. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab282199 at 1/100 dilution (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

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