abcam

ab316764

Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35]

Lab Essentials | Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR28709-35
Purification technique	Affinity purification Protein A
Specificity	We have not tested this antibody on endogenous material. We welcome any feedback from customers who have used this antibody in cell lines or tissue.
Concentration	0.502 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Transfected cell lysate - Human

Dilution info	1/1000
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Transfected cell line - Human
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Transfected cell line - Human
Dilution info	1/5000
Notes	-

Not recommended

Species	Transfected cell lysate - Human
Dilution info	-

Notes	-

IP

Tested

Species	Transfected cell lysate - Human
Dilution info	1/30
Notes	-

Not recommended

Species	Transfected cell line - Human
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Transfected cell line - Human, Transfected cell lysate - Human
Dilution info	-
Notes	-

Target data

See full target information ESR1 Y537S + D538G

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	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

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.

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

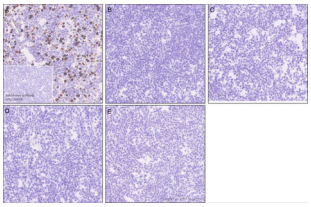
We do not recommend this combination. It is not covered by our product promise.

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.

4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764)

Estrogen Receptor alpha (mutated Y537S + D538G) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody

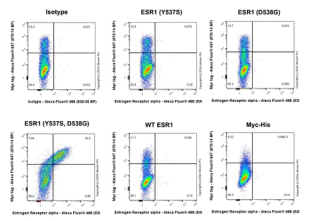
Immunohistochemical analysis of paraffin-embedded (A) HEK-293T (human embryonic kidney epithelial cell) transfected with a human ERα (Y537S, D538G) expression vector containing a His tag. (B) HEK-293T transfected with a human ERα (Y537S) expression vector containing a His tag. (C) HEK-293T transfected with a human ERα (D538G) expression vector containing a His tag. (D) HEK-293T transfected with a human ERα expression vector containing a His tag. (E) HEK-293T transfected with empty vector containing a His tag. tissue labeling Estrogen Receptor alpha (mutated Y537S + D538G) with ab316764 at 1/2000 (0.266 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on 293T overexpressing (A) human ERα (Y537S, D538G). No staining on 293T overexpressing human (B) ERα (Y537S), (C) ERα (D538G), (D) wild-type ERα, or (E) the empty vector control.
The section was incubated with ab316764 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764)

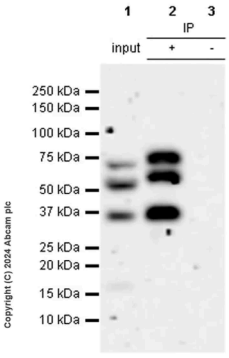
Estrogen Receptor alpha (mutated Y537S + D538G) Flow Cytometry (Intracellular) staining using rabbit Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Isotype (Upper Left) / 293T cells transfected with a human ERα (Y537S) expression vector containing a myc-His-tag® (Upper Middle) / 293T cells transfected with a human ERα (D538G) expression vector containing a myc-His-tag® (Upper Right) / 293T cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag® (Lower Left) / 293T cells transfected with a human wild type ERα expression vector containing a myc-His-tag® (Lower Middle) / 293T cells transfected

with an empty expression vector containing a myc-His-tag® (Lower Right) cells labelling Estrogen Receptor alpha (mutated Y537S + D538G) with ab316764 at 1/5000 dilution (0.01 ug)/Middle, Right and Lower Left compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control.

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.

Cells are co-stained with Myc tag conjugated to Alexa Fluor®647.



Immunoprecipitation - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764)

Estrogen Receptor alpha (mutated Y537S + D538G) was immunoprecipitated from 0.35 mg 293T (human embryonic kidney epithelial cell) cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate with ab316764 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab316764 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: 293T (human embryonic kidney epithelial cell) cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate
Lane 2: ab316764 IP in 293T (human embryonic kidney epithelial cell) cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab316764 in 293T cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate

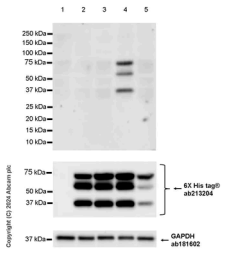
All lanes:
Immunoprecipitation - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764) at 1/30 dilution

All lanes:
293T (human embryonic kidney epithelial cell) cells transfected with a human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate

Secondary

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

Exposure time: 145s



Western blot - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764)

Estrogen Receptor alpha (mutated Y537S + D538G) Western blot staining using rabbit Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

In Western blot, Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) staining at 1/5000 dilution.

All lanes:
Western blot - Anti-Estrogen Receptor alpha (mutated Y537S + D538G) antibody [EPR28709-35] (ab316764) at 1/1000 dilution

Lane 1:

293T (human embryonic kidney epithelial cell) cells transfected with an empty vector containing a His-tag, whole cell lysate at 20 µg

Lane 2:
293T cells transfected with human ERα (Y537S) expression vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 3:
293T cells transfected with human ERα (D538G) expression vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 4:
293T cells transfected with human ERα (Y537S, D538G) expression vector containing a myc-His-tag®, whole cell lysate at 20 µg

Lane 5:
293T cells transfected with human ERα expression vector containing a myc-His-tag®, whole cell lysate at 20 µg

Secondary

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

Developed using the ECL technique.

Observed band size: 37-66 kDa, 36 kDa

Exposure time: 92s

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