

Estrogen Receptor alpha Rabbit pAb

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Catalog # AP52087

Product Information

Application	WB
Primary Accession	P03372
Reactivity	Human, Rat
Predicted	Mouse, Dog, Rabbit
Host	Rabbit
Clonality	Polyclonal
Calculated MW	66216
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from the middle of human Estrogen Receptor alpha
Epitope Specificity	331-360/595
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Isoform 1: Nucleus. Cytoplasm. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Note=A minor fraction is associated with the inner membrane.Isoform 3: Nucleus. Cytoplasm. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Cell membrane; Single-pass type I membrane protein. Note=Associated with the inner membrane via palmitoylation (Probable). At least a subset exists as a transmembrane protein with a N-terminal extracellular domain.Nucleus. Golgi apparatus. Cell membrane. Note=Colocalizes with ZDHHC7 and ZDHHC21 in the Golgi apparatus where most probably palmitoylation occurs. Associated with the plasma membrane when palmitoylated.
SIMILARITY	Belongs to the nuclear hormone receptor family. NR3 subfamily.Contains 1 nuclear receptor DNA-binding domain.
SUBUNIT	Binds DNA as a homodimer. Can form a heterodimer with ESR2. Isoform 3 can probably homodimerize or heterodimerize with isoform 1 and ESR2. Interacts with FOXC2, MAP1S, SLC30A9, UBE1C and NCOA3 coactivator (By similarity). Interacts with EP300; the interaction is estrogen-dependent and enhanced by CITED1. Interacts with CITED1; the interaction is estrogen-dependent. Interacts with NCOA5 and NCOA6 coactivators. Interacts with NCOA7; the interaction is a ligand-inducible. Interacts with PHB2, PELP1 and UBE1C. Interacts with AKAP13. Interacts with CUEDC2. Interacts with KDM5A. Interacts with SMARD1. Interacts with HEXIM1. Interacts with PBXIP1. Interaction with MUC1 is stimulated by 7 beta-estradiol (E2) and enhances ERS1-mediated transcription. Interacts with DNTTIP2, FAM120B and UIMC1. Interacts with isoform 4 of TXNRD1. Interacts with MLL2. Interacts with ATAD2 and this interaction is enhanced by estradiol. Interacts with KIF18A and LDB1. Interacts with RLIM (via C-terminus). Interacts with MACROD1. Interacts with SH2D4A and PLCG. Interaction with SH2D4A blocks binding to PLCG and inhibits estrogen-induced cell proliferation. Interacts with DYNLL1. Interacts with CCDC62 in the presence of estradiol/E2; this interaction seems to

	enhance the transcription of target genes. Interacts with NR2C1; the interaction prevents homodimerization of ESR1 and suppresses its transcriptional activity and cell growth. Interacts with DYX1C1. Interacts with PRMT2. Interacts with PI3KR1 or PI3KR2, SRC and PTK2/FAK1. Interacts with RBFOX2. Interacts with STK3/MST2 only in the presence of SAV1 and vice-versa. Binds to CSNK1D. Interacts with NCOA2; NCOA2 can interact with ESE1 AF-1 and AF-2 domains simultaneously and mediate their transcriptional synergy. Interacts with DDX5. Interacts with NCOA1; the interaction seems to require a self-association of N-terminal and C-terminal regions. Interacts with ZNF366, DDX17, NFKB1, RELA, SP1 and SP3. Interacts with NRIP1 (By similarity).
Post-translational modifications	Phosphorylated by cyclin A/CDK2 and CK1. Phosphorylation probably enhances transcriptional activity. Self-association induces phosphorylation. Glycosylated; contains N-acetylglucosamine, probably O-linked. Ubiquitinated. Deubiquitinated by OTUB1. Dimethylated by PRMT1 at Arg-260. The methylation may favor cytoplasmic localization. Palmitoylated (isoform 3). Not biotinylated (isoform 3). Palmitoylated by ZDHHC7 and ZDHHC21. Palmitoylation is required for plasma membrane targeting and for rapid intracellular signaling via ERK and AKT kinases and cAMP generation, but not for signaling mediated by the nuclear hormone receptor.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Estrogen and progesterone receptor are members of a family of transcription factors that are regulated by the binding of their cognate ligands. The interaction of hormone-bound estrogen receptors with estrogen responsive elements (EREs) alters transcription of ERE-containing genes. The carboxy terminal region of the estrogen receptor contains the ligand binding domain, the amino terminus serves as the transactivation domain, and the DNA binding domain is centrally located. Two forms of estrogen receptor have been identified, ER Alpha and ER Beta. ER Alpha and ER Beta have been shown to be differentially activated by various ligands. The biological response to progesterone is mediated by two distinct forms of the human progesterone receptor (hPR-A and hPR-B), which arise from alternative splicing. In most cells, hPR-B functions as a transcriptional activator of progesterone-responsive gene, whereas hPR-A function as a transcriptional inhibitor of all steroid hormone receptors.

Additional Information

Gene ID	2099
Other Names	Estrogen receptor, ER, ER-alpha, Estradiol receptor, Nuclear receptor subfamily 3 group A member 1, ESR1, ESR, NR3A1
Target/Specificity	Widely expressed. Isoform 3 is not expressed in the pituitary gland.
Dilution	WB=1:500-2000, ICC/IF=1:50-200
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	ESR1
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Synonyms

ESR, NR3A1

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).

Cellular Location

[Isoform 1]: Nucleus {ECO:0000255|PROSITE- ProRule:PRU00407, ECO:0000269|PubMed:12682286, ECO:0000269|PubMed:20074560}. Cytoplasm. Cell membrane; Peripheral membrane protein; Cytoplasmic side. Note=A minor fraction is associated with the inner membrane Nucleus. Golgi apparatus. Cell membrane. Note=Colocalizes with ZDHHC7 and ZDHHC21 in the Golgi apparatus where most probably palmitoylation occurs. Associated with the plasma membrane when palmitoylated

Tissue Location

Widely expressed (PubMed:10970861). Not expressed in the pituitary gland (PubMed:10970861)

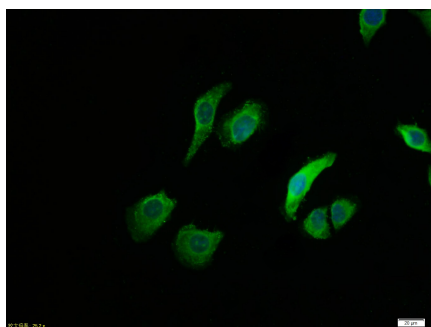
Background

Estrogen and progesterone receptor are members of a family of transcription factors that are regulated by the binding of their cognate ligands. The interaction of hormone-bound estrogen receptors with estrogen responsive elements(EREs) alters transcription of ERE-containing genes. The carboxy terminal region of the estrgen receptor contains the ligand binding domain, the amino terminus serves as the transactivation domain, and the DNA binding domain is centrally located. Two forms of estrogen receptor have been identified, ER Alpha and ER Beta. ER Alpha and ER Beta have been shown to be differentially activated by various ligands. The biological response to progesterone is mediated by two distinct forms of the human progesterone receptor (hPR-A and hPR-B), which arise from alternative splicing. In most cells, hPR-B functions as a transcriptional activator of progesterone-responsive gene, whereas hPR-A function as a transcriptional inhibitor of all steroid hormone receptors.

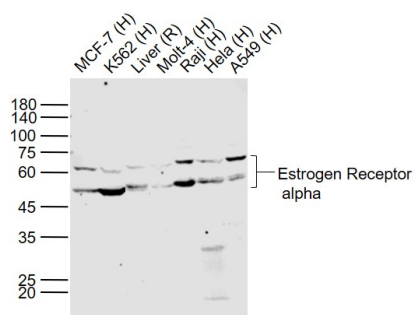
References

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Koike S.,et al.Nucleic Acids Res. 15:2499-2513(1987).
Maggi A.M.A.,et al.Submitted (JUN-1991) to the EMBL/GenBank/DDBJ databases.
Fan M.,et al.Mol. Endocrinol. 16:315-330(2002).
Eriksson M.,et al.Biochem. Biophys. Res. Commun. 361:127-132(2007).

Images



Tissue/cell: MCF7 cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking buffer (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (Estrogen Receptor alpha) polyclonal Antibody, Unconjugated (AP52087) 1:100, 90 minutes at 37°C; followed by a FITC conjugated Goat Anti-Rabbit IgG antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the cell nuclei.



Sample:

Lane 1: MCF-7 (Human) Cell Lysate at 30 ug

Lane 2: K562 (Human) Cell Lysate at 30 ug

Lane 3: Liver (Rat) Lysate at 40 ug

Lane 4: Molt-4 (Human) Cell Lysate at 30 ug

Lane 5: Raji (Human) Cell Lysate at 30 ug

Lane 6: HeLa (Human) Cell Lysate at 30 ug

Lane 7: A549 (Human) Cell Lysate at 30 ug

Primary: Anti- Estrogen Receptor alpha (AP52087) at 1/300 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 67 kD

Observed band size: 62/50 kD

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