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ESR1 Antibody

Catalog # ASC11682

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P03372
Other Accession	NP_001116214, 170295804
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	66216
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	ESR1 antibody can be used for detection of ESR1 by Western blot at 1 - 2 g/mL.

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	ESR1; ESR1 antibody is human, mouse and rat reactive.
Reconstitution & Storage	ESR1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	ESR1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ESR1
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

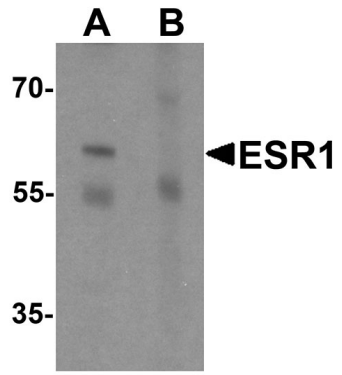
ESR1 Antibody: Estrogen receptors (ER) are members of the steroid/thyroid hormone receptor superfamily of ligand-activated transcription factors (1). Estrogen receptors, including ESR1, also known as ER-alpha and ESR2 (ER-beta), contain DNA binding and ligand binding domains and are critically involved in regulating the normal function of reproductive tissues. ESR1 is a widely expressed nuclear protein and serves as a strong activator of estrogen responsive genes (1,2). Phosphorylation of serines 104 and 106, located in the N-terminal transcription activation function-1 domain (AF-1), plays a large role in regulating ER alpha activity (3).

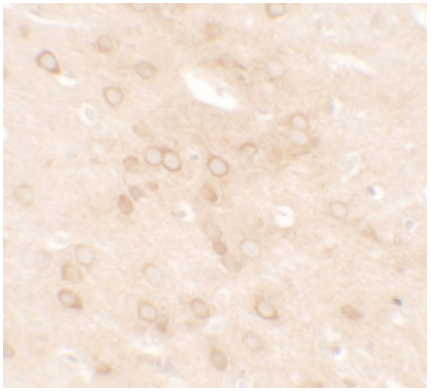
References

Pakdel F, Reese JC, and Katzenellenbogen BS. Identification of charged residues in an N- terminal portion of the hormone-binding domain of the human estrogen receptor important in transcriptional activity of the receptor. Mol. Endocrinol. 1993; 7:1408-17.
Sheeler CQ, Singleton DW, and Khan SA. Mutation of serines 104, 106, and 118 inhibits dimerization of the human estrogen receptor in yeast. Endocr. Res. 2003; 29:237-55.
Rogatsky I, Trowbridge JM, and Garabedian MJ. Potentiation of human estrogen receptor alpha transcriptional activation through phosphorylation of serines 104 and 106 by the cyclin A-CDK2 complex. J. Biol. Chem. 1999; 274:22296-302.

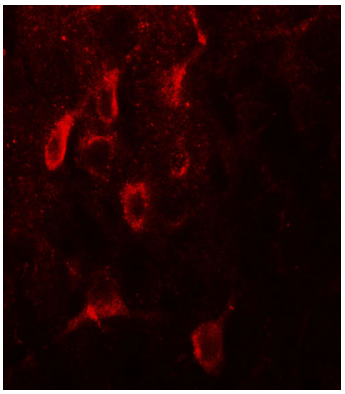
Images

Western blot analysis of ESR1 in rat brain tissue lysate with ESR1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.





Immunohistochemistry of ESR1 in rat brain tissue with ESR1 antibody at 5 µg/mL.



Immunofluorescence of ESR1 in rat brain tissue with ESR1 antibody at 20 µg/mL.