**CUSABIO TECHNOLOGY LLC** 

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## ESR1 Recombinant Monoclonal Antibody

Product Code	CSB-RA172909A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P03372
Immunogen	A synthesized peptide derived from human Estrogen Receptor alpha
Species Reactivity	Human, Mouse
Tested Applications	ELISA, WB; Recommended dilution: WB:1:500-1:5000
Relevance	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. Isoform 3 is involved in activation of NOS3 and endothelial nitric oxide production. 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. Essential for MTA1-mediated transcriptional regulation of BRCA1 and BCAS3. Isoform 3 can bind to ERE and inhibit isoform 1.
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
lsotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody

1



Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling; Neuroscience; Cancer; Signal transduction
Gene Names	ESR1
Clone No.	3H8
Image	Western Blot



Western Blot Positive WB detected in: NIH/3T3 whole cell Iysate, SH-SY5Y whole cell Iysate, U-87 whole cell Iysate All Ianes: Estrogen Receptor alpha antibody at 1:1000 Secondary Goat polyclonal to rabbit IgG at 1/50000 dilution Predicted band size: 67, 54, 48, 36 kDa Observed band size: 67 kDa

## Description

To produce the ESR1 recombinant monoclonal antibody, a multi-step process is followed. First, the ESR1 monoclonal antibody is harvested and its genetic sequence is determined through gene sequencing. Next, a vector carrying the ESR1 monoclonal antibody gene is constructed and transfected into a host cell line for culturing. A synthesized peptide derived from human ESR1 protein is used to stimulate the ESR1 monoclonal antibody is purified using affinity chromatography to ensure high specificity and purity. Finally, the antibody is validated through ELISA and WB assays to confirm its specificity for detecting ESR1. It can react with human and mouse ESR1 proteins.

The ESR1 protein, also known as estrogen receptor alpha (ERα), plays a critical role in the regulation of gene expression, development and differentiation, reproduction and fertility, metabolism and cardiovascular health, and cancer. ESR1 is a nuclear receptor that binds to estrogen and regulates the expression of genes involved in a variety of cellular processes, including cell proliferation, differentiation, and apoptosis. ESR1 plays a critical role in normal development and differentiation, particularly in the development of female reproductive tissues such as the mammary gland and uterus. ESR1 is required for the proper development and function of these tissues, and its dysregulation can lead to abnormal growth and cancer. ESR1 participates in the regulation of the menstrual cycle, ovulation, and fertility. ESR1 is expressed in the ovaries and plays a role in follicular development and ovulation. ESR1 also plays a role in the development and function of the uterus during pregnancy. ESR1 is a major driver of estrogen receptor-positive breast cancer, which accounts for approximately 75% of all breast cancer cases.