10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

# ER Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1112a

## Product Information

| | |
|---|---|
| **Application** | WB, E |
| **Primary Accession** | P03372 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Clone Names** | 5D4B1; 5D4E3 |
| **Isotype** | IgG2b |
| **Calculated MW** | 66216 |
| **Description** | ER (estrogen receptor 1) a member of the steroid receptor superfamily, contains highly conserved DNA binding (DBD) and ligand binding domains (LBD). Through its estrogen-independent and estrogen-dependent activation domains (AF-1 and AF-2, respectively), ER regulates transcription by recruiting coactivator proteins and interacting with general transcriptional machinery. Phosphorylation provides an important mechanism to regulate ER activity. ER is phosphorylated on multiple sites. Serines 104, 106, 118 and 167 are located in the amino-terminal transcription activation function domain AF-1, and phosphorylation of these serines plays an important role in regulating ER activity. Ser118 may be the substrate of the transcription regulatory kinase cdK7. Ser167 may be phosphorylated by p90RSK and Akt. Phosphorylation of Ser167 may confer tamoxifen resistance in breast cancer patients. |
| **Immunogen** | Purified recombinant fragment of ER expressed in E. Coli. |
| **Formulation** | Ascitic fluid containing 0.03% sodium azide. |

## 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 |
| **Dilution** | WB~~1/500 - 1/2000 E~~N/A |
| **Storage** | Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles. |
| **Precautions** | ER Antibody is for research use only and not for use in diagnostic or therapeutic procedures. |

## Protein Information

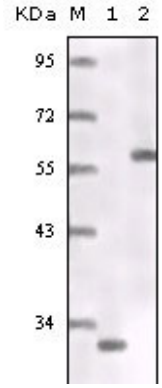
| | |
|---|---|
| **Name** | ESR1 |
| **Synonyms** | ESR, NR3A1 |
| **Function** | Nuclear hormone receptor. The steroid hormones and their receptors are involved in the regulation of eukaryotic gene expression and affect cellular proliferation and differentiation in target tissues. Ligand-dependent 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) |

## References

1. ampbell, R.A. et al. 2001, J. Biol. Chem. 276, 9817-9824. 2. Chen, D. et al. 2000, Mol. Cell 6, 127-137.

## Images

Figure 1: Western blot analysis using ER mouse mAb truncated ER recombinant protein (1) MCF-7 cell lysates (2).



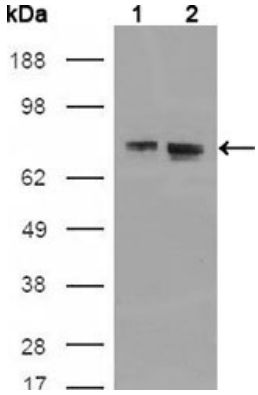




Figure 2: Western blot analysis using ER mouse mAb against HEK293T cells transfected with the pCMV6-ENTRY control (1) and pCMV6-ENTRY ER cDNA (2).

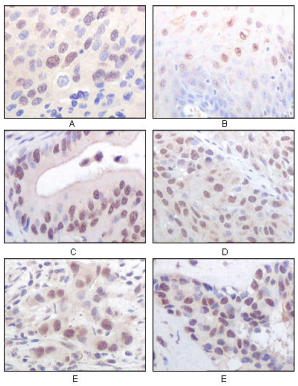



Figure 2: Immunohistochemical analysis of paraffin-embedded human esophageal squamous cell carcinoma (A), normal esophagus epithelium (B), rectum adenocarcinoma (C), lung squamous cell carcinoma (D), breast infiltrating carcinoma (E), and breast infiltrating carcinoma (F) tissues, showing nuclear localization using MOF/MYST1 mouse mAb with DAB staining.

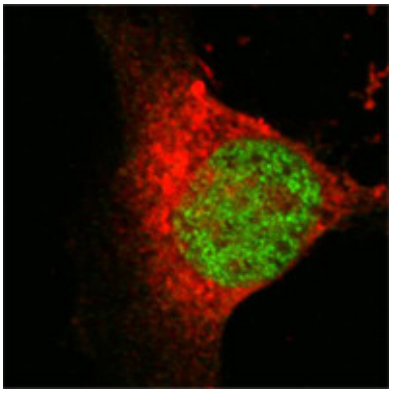


Figure 3: Confocal immunofluorescence analysis of Eca 109 cells using anti-MOF/MYST1 mAb (green), showing nuclear localization.