

Recombinant Human ESR1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50287

Size: 10ug, 100ug

Protein Name: Estrogen receptor (ER) (ER-alpha) (Estradiol receptor) (Nuclear receptor subfamily 3 group A member 1)

Synonym: ESR1, ESR, NR3A1

UniProt ID: P03372

UniProt Link: www.uniprot.org/uniprotkb/P03372/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 595 AA

Molecular Weight: 66 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTMTLHTKASGMALLHQIQGNELEPLNRPQLKIPLERPLGEVYLDSSKPAVYNYPEGAAYEFNAAAA
ANAQVYGQTGLPYGPGSEAAAFGSNGLGGFPPLNSVSPSPLMLLHPPPQLSPFLQPHGQQVPYYL
ENPSGYTVREAGPPAFYRPNSDNRRQGGRERLASTNDKGSMAKESAKETRYCAVCNDYASGYH
YGVWSCEGCKAFFKRISIQGHNDYMCPATNQCTIDKNRRKSCQACRLRKCYEVGMMKGGIRKDRR
GGRMLKHKRQRDDGEGRGEVGSAGDMRAANLWPSPLMIKRSKKNLALSLTADQMVSAALLDAEPP
ILYSEYDPTRPFSEASMMGLLTNLADRELHMINWAKRVPGFVDLTLDQVHLLECAWLEILMIGLV
WRSMEHPGKLLFAPNLLDRNQGKCEGMVEIFDMLLATSSRFRMMNLQGEFVCLKSIILLNSGVY
TFLSSTLKSLEEKDHIHRVLDKITDTLIHLMAKAGLTQQQHQRQAQLLLILSHIRHMSNKGMEHLYSM
KCKNVVPLYDLLLEMLDAHRLHAPTSRGGASVEETDQSHLATAGSTSSHSLQKYYITGEAEGFPATV

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Estrogen receptor (ER) (ER-alpha) (Estradiol receptor) (Nuclear receptor subfamily 3 group A member 1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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 displaces 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).

Subcellular Localization: [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.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.