



LD Biopharma, Inc.
9924 Mesa Rim Road, Suite B
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Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human ESRRg-11R Protein
Catalog Number: hTF-1893
Manufacturer: LD Biopharma, Inc.

Introduction

Human estrogen receptor-gamma (ESRRg) belongs to the nuclear hormone receptor superfamily. All members of the ESRR family share an almost identical DNA binding domain, which is composed of two C4-type zinc finger motifs. The ESRR members are orphan nuclear receptors; they bind to the estrogen response element and steroidogenic factor 1 response element, and activate genes controlled by both response elements in the absence of any ligands. The ESRR family is closely related to the estrogen receptor (ER) family. They share target genes, co-regulators and promoters, and by targeting the same set of genes, the ESRRs seem to interfere with the ER-mediated estrogen response in various ways. It has been reported that the family member encoded by this gene functions as a transcriptional activator of DNA cytosine-5-methyltransferases 1 (Dnmt1) expression by direct binding to its response elements in the DNMT1 promoters, modulates cell proliferation and estrogen signaling in breast cancer, and negatively regulates bone morphogenetic protein 2-induced osteoblast differentiation and bone formation. Multiple alternatively spliced transcript variants have been identified, which mainly differ at the 5' end and some of which encode protein isoforms differing in the N-terminal region.

Full-length human ESRRg cDNA (457 aa, Isoform-1) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal & 11 arginine (11R) tag at its C-terminal. It was expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: ESRRg (ERR3; ERRgamma; NR3B3)
Accession Number: NP_001429
Species: Human
Size: 20 µg / Vial
Composition: 0.2 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.



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Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Poidatz D, et al., *Involvement of estrogen-related receptor-gamma and mitochondrial content in intrauterine growth restriction and preeclampsia*. Fertil. Steril. 104 (2), 483-490 (2015)

Lim J, et al., *Hypoxia-inducible factor-1alpha upregulates tyrosine hydroxylase and dopamine transporter by nuclear receptor ERRgamma in SH-SY5Y cells*. Neuroreport 26 (6), 380-386 (2015)

Liu X, et al., *A characteristic back support structure in the bisphenol A-binding pocket in the human nuclear receptor ERRgamma*
PLoS ONE 9 (6), E101252 (2014)

Luo Y, et al., *Estrogen-related receptor gamma serves a role in blood pressure homeostasis during pregnancy*. Mol. Endocrinol. 28 (6), 965-975 (2014)

Applications

1. May be used for in vitro ESRRg mediated gene transcription regulation for various cancer cells study by intracellular delivery of this protein directly in cell culture medium.
2. May be used for mapping ESRRg protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker / therapeutic protein for diagnostic application (prognosis) of several cancers.
5. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence



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MASMTGGQQMGRGHHHHHENLYFQGGEFSNKDRHIDSSCSSFIKTEPSSPASLTDSVNHHS
PG
GSSDASGSYSSTMNGHQGLDSPPLYPSAPILGGSGPVRKLYDDCSSTIVEDPQTKCEYMLNSM
PKRLCLVCGDIASGYHYGVASCEACKAFFKRTIQGNIEYSCPATNECEITKRRRKSCQACRFMK
CLKVGMLKEGVRLDRVRGGRQKYKRRIDAENSPYLNPLVQPAKKPLLWSDPADNKIVSHLLVA
EPEKIYAMPDPTVPDSDIKALTTLCDLADRELVVIIGWAKHIPGFSTLSLADQMSLLQSAWMEI
LILGVVYRSLSFEDLVYADDYIMDEDQSKLAGLLDLNNAIILQLVKKYKSMKLEKEEFVTLKAI
ALANSDSMHIEDVEAVQKLQDVLHEALQDYEAGQHMEDPRRAGKMLMTLPLLRQTSTKAVQHFY
NIKLEGKVPMHKLFLEMLEAKVESGGGGSPGRRRRRRRRRRR