

ERR α (1ERR87): sc-65715

BACKGROUND

Estrogen related receptor α (ERR α) is a nuclear receptor in the superfamily of ligand-regulated transcription factors and is a member of the NR3B orphan nuclear receptor subgroup (consisting of α , β and γ). ERR α plays a role in modulating the estrogen signaling pathway. In addition, the expression of ERR α has been shown to increase during fasting and cold exposure. ERR α may be important for regulating mitochondrial biogenesis and oxidative metabolism by acting directly on genes necessary for mitochondrial function. Mice lacking ERR α are unable to maintain their body temperature in the cold. ERR α may also be involved in the maintenance and formation of cartilage. This information could be useful in finding therapeutic agents for a variety of diseases affecting the joints.

REFERENCES

- Chen, F., et al. 1999. Identification of two hERR2-related novel nuclear receptors utilizing bioinformatics and inverse PCR. *Gene* 228: 101-109.
- Hong, H., et al. 1999. Hormone-independent transcriptional activation and coactivator binding by novel orphan nuclear receptor ERR3. *J. Biol. Chem.* 274: 22618-22626.
- Greschik, H., et al. 2002. Structural and functional evidence for ligand-independent transcriptional activation by the estrogen-related receptor 3. *Mol. Cell* 9: 303-313.

CHROMOSOMAL LOCATION

Genetic locus: ESRRA (human) mapping to 11q13.1; Esrra (mouse) mapping to 19 A.

SOURCE

ERR α (1ERR87) is a mouse monoclonal antibody raised against amino acids 1-76 of ERR α of human origin.

PRODUCT

Each vial contains 200 μ g IgG γ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ERR α (1ERR87) is recommended for detection of ERR α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ERR α siRNA (h): sc-44706, ERR α siRNA (m): sc-44707, ERR α shRNA Plasmid (h): sc-44706-SH, ERR α shRNA Plasmid (m): sc-44707-SH, ERR α shRNA (h) Lentiviral Particles: sc-44706-V and ERR α shRNA (m) Lentiviral Particles: sc-44707-V.

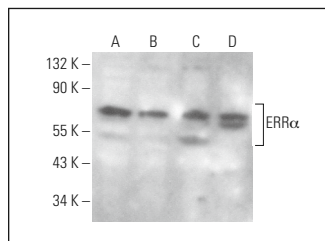
Molecular Weight of ERR α : 53 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-375 cell lysate: sc-3811 or MCF7 whole cell lysate: sc-2206.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



ERR α (1ERR87): sc-65715. Western blot analysis of ERR α expression in HeLa (A), MCF7 (B), A-375 (C) and Neuro-2A (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Miao, L., et al. 2010. Estrogen receptor-related receptor α mediates up-regulation of aromatase expression by prostaglandin E2 in prostate stromal cells. *Mol. Endocrinol.* 24: 1175-1186.
- Esch, A.M., et al. 2012. Production and characterization of monoclonal antibodies to estrogen-related receptor α (ERR α) and use in immunoaffinity chromatography. *Protein Expr. Purif.* 84: 47-58.
- Harada, K., et al. 2014. Alteration of energy metabolism in the pathogenesis of bile duct lesions in primary biliary cirrhosis. *J. Clin. Pathol.* 67: 396-402.
- Matsushima, H., et al. 2016. Anti-tumor effect of estrogen-related receptor α knockdown on uterine endometrial cancer. *Oncotarget* 7: 34131-34148.
- Son, Y.O., et al. 2017. Estrogen-related receptor γ causes osteoarthritis by upregulating extracellular matrix-degrading enzymes. *Nat. Commun.* 8: 2133.
- Yoriki, K., et al. 2019. Estrogen-related receptor α induces epithelial-mesenchymal transition through cancer-stromal interactions in endometrial cancer. *Sci. Rep.* 9: 6697.
- Vargas, G., et al. 2019. ERR α promotes breast cancer cell dissemination to bone by increasing RANK expression in primary breast tumors. *Oncogene* 38: 950-964.
- Ghanbari, F., et al. 2020. Cholesterol as an endogenous ligand of ERR α promotes ERR α -mediated cellular proliferation and metabolic target gene expression in breast cancer cells. *Cells* 9: 1765.
- Pan, Z., et al. 2022. Cholesterol promotes EGFR-TKIs resistance in NSCLC by inducing EGFR/Src/Erk/SP1 signaling-mediated ERR α re-expression. *Mol. Cancer* 21: 77.

RESEARCH USE

For research use only, not for use in diagnostic procedures.