

Product Information

Anti-Estrogen-Related Receptor α 1
produced in rabbit, affinity isolated antibody

Product Number **E2781**

Product Description

Anti-Estrogen-Related Receptor α 1 (ERR α /NR3B1/ERR1) is produced in rabbit using as immunogen a synthetic peptide M(1)SSQVVGIEPLYIKAE(16) corresponding to amino acid residues 1-16 from human ERR1 protein. The immunizing peptide sequence is completely conserved between canine, human, mouse, and rat. The antibody was affinity isolated on immobilized immunogen.

Anti-Estrogen-Related Receptor α 1 specifically recognizes human ERR1 by immunoblotting (52 kDa) using transfected cells. An unidentified band is seen at ~37 kDa. The antibody was not tested in other species. The antibody shows no cross-reactivity to ERR3.

Estrogen-Related Receptor α 1 (ERR α , ERR1) is an orphan member of the nuclear hormone receptor superfamily. The ERR family members share an almost identical DNA-binding domain and have 68% amino acid identity with the estrogen receptor.

The ERR1 protein is a constitutive activator of the estrogen response element and the palindromic thyroid hormone response element (TRE(pal)) but not of the glucocorticoid response element (GRE). The protein binds to an ERR- α response element (ERRE) containing a single consensus half-site, 5'-tnaaggtca-3' that binds to the medium-chain acyl coenzyme (mcd) a dehydrogenase response element nrre-1 and acts as a regulator of mcd^{1,2}

ERR1 functions as a metabolic regulator, expressed in tissues that preferentially metabolize fatty acids. It is the major isoform expressed in human breast cancer cell lines. Studies have shown that Phe-329 is responsible for the constitutive activity of ERR α .³ ERR α is a potential biomarker for unfavorable clinical outcome and possibly, hormonal insensitivity in breast tumors.

ERR α status may be predictive of sensitivity to hormonal blockade therapy, and ERR α status may also be predictive of ErbB2-based therapy such as herceptin. Moreover, ERR α may be a candidate target for therapeutic development. ERR α null mice have altered regulation of genes involved in adipogenesis. The corresponding gene for ERR1 is NR3B1.

Reagent

The antibody is provided as 100 μ g of affinity purified antibody (1 mg/mL) in phosphate buffered saline containing 1 mg/mL bovine serum albumin and 0.05% sodium azide.

Precautions and Disclaimer

Due to the sodium azide content a material safety sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

Store at -20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing. Storage in "frost-free" freezers is not recommended. Centrifuge before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of ~ 2 μ g/mL is recommended using COS-7 transfected cells.

Note: In order to obtain the best results and assay sensitivity in various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Sladek, R., et al., The orphan nuclear receptor estrogen-related receptor α is a transcriptional regulator of the human medium-chain acyl coenzyme A dehydrogenase gene. *Mol. Cell Biol.*, **17**, 5400-5409 (1997).
2. Chen, S., et al., Molecular basis for the constitutive activity of estrogen-related receptor α -1. *J. Biol. Chem.*, **276**, 28465-28470 (2001).
3. Johnston, S.D., et al., Estrogen-related receptor α 1 functionally binds as a monomer to extended half-site sequences including ones contained within estrogen-response elements. *Mol. Endocrinol.*, **11**, 342-352 (1997).

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