

BACKGROUND

The estrogen-related receptor alpha (ERR α , NR3B1) is an orphan member of the nuclear receptor superfamily identified on the basis of its structural similarity to the estrogen receptor alpha (ER α , NR3A1). There are three members of the ERR family, ERR α , ERR β , and ERR γ . ERR α is functionally similar to ER α in that it can bind the inverted repeat estrogen response element (ERE) sequence in target gene promoters; although ERR α preferentially binds a nine-nucleotide extended half site sequence, the ERRE. In contrast to the ligand-dependent activation of ER α , ERR α is constitutively active and does not respond to estradiol or other natural estrogens, although its activity can be inhibited by the synthetic estrogen diethylstilbestrol.¹ The constitutive ERR α can interact with and be modulated by members of the SRC and PGC-1 families of coactivators.² The function of ERR α as a transcriptional activator seems to be cell type and promoter specific. This specificity is proposed to be dependent on factors including relative coactivator levels, interactions with other nuclear receptors, and the presence of appropriate activating stimuli or the context of the response elements. ERR α activates the promoter of its own gene, *ESRRA*, thereby providing positive regulation of its own expression.³ Other known ERR α target genes are involved in regulation of mitochondrial biogenesis and energy metabolism. ERR α also activates the *TFF1* (also known as *pS2*) and *aromatase* genes, which are implicated in breast cancer. ERR α is also a phosphor-protein whose expression in human breast tumors correlates with that of the receptor tyrosine kinase ErbB2, suggesting that its transcriptional activity could be regulated by signaling cascades.⁴ Growth factor signaling can selectively activate ERR α target genes in breast cancer cells.

References:

1. Giguere, V. et al: Nature 331:91-4, 1988
3. Sladek, R. et al: Mol. Cell. Biol. 17:5400-9, 1997
2. Huss, J.M. et al: Mol. Cell. Biol. 24:9079-91, 2004
4. Barry, J.B. & Giguere, V.: Cancer Res. 65:6120-6129, 2006

TECHNICAL INFORMATION

Source:

ERR- α Antibody is a rabbit antibody raised against a short peptide from N-terminal sequence of human ERR- α .

Specificity and Sensitivity:

This antibody detects endogenous ERR- α proteins without cross-reactivity with other family members.

Storage Buffer: 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.

Storage:

Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	2 μ g/mL
IP	n/d
IHC	n/d
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

