

## ERR $\alpha$ (2ERR37): sc-65722

### BACKGROUND

Estrogen related receptor  $\alpha$  (ERR $\alpha$ ) 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  $\alpha$ ,  $\beta$  and  $\gamma$ ). ERR $\alpha$  plays a role in modulating the estrogen signaling pathway. In addition, the expression of ERR $\alpha$  has been shown to increase during fasting and cold exposure. ERR $\alpha$  may be important for regulating mitochondrial biogenesis and oxidative metabolism by acting directly on genes necessary for mitochondrial function. Mice lacking ERR $\alpha$  are unable to maintain their body temperature in the cold. ERR $\alpha$  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

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- Villena, J.A., et al. 2007. Orphan nuclear receptor estrogen-related receptor  $\alpha$  is essential for adaptive thermogenesis. *Proc. Natl. Acad. Sci. USA* 104: 1418-1423.
- Bonnelye, E., et al. 2007. The orphan nuclear estrogen receptor-related receptor  $\alpha$  regulates cartilage formation *in vitro*: implication of Sox-9. *Endocrinology* 148: 1195-1205.
- Zhang, Z., et al. 2007. Interplay between estrogen-related receptor  $\alpha$  (ERR $\alpha$ ) and  $\gamma$  (ERR $\gamma$ ) on the regulation of ERR $\alpha$  gene expression. *Mol. Cell. Endocrinol.* 264: 128-141.

### CHROMOSOMAL LOCATION

Genetic locus: ESRR $\alpha$  (human) mapping to 11q13.1.

### SOURCE

ERR $\alpha$  (2ERR37) is a mouse monoclonal antibody raised against amino acids 79-198 of ERR $\alpha$  of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

### APPLICATIONS

ERR $\alpha$  (2ERR37) is recommended for detection of ERR $\alpha$  of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

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

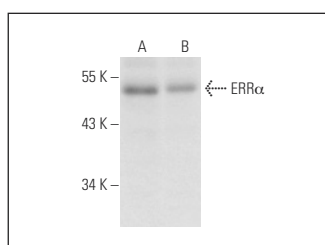
Molecular Weight of ERR $\alpha$ : 53 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or HeLa + serum-starved cell lysate: sc-24693.

### RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

### DATA



ERR $\alpha$  (2ERR37): sc-65722. Western blot analysis of ERR $\alpha$  expression in HeLa (A) and serum starved HeLa (B) whole cell lysates.

### SELECT PRODUCT CITATIONS

- Esch, A.M., et al. 2012. Production and characterization of monoclonal antibodies to estrogen-related receptor  $\alpha$  (ERR $\alpha$ ) and use in immunoaffinity chromatography. *Protein Expr. Purif.* 84: 47-58.

### STORAGE

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

### RESEARCH USE

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