

ERR α (E1G1J) Rabbit mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, ChIP, ChIP-seq	Reactivity: H M R Mk	Sensitivity: Endogenous	MW (kDa): 50	Source/Isotype: Rabbit IgG	UniProt ID: #P11474	Entrez-Gene Id: 2101
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Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 μ l of antibody and 10 μ g of chromatin (approximately 4 x 10⁶ cells) per IP. This antibody has been validated using SimpleChIP[®] Enzymatic Chromatin IP Kits.

Application	Dilution
Western Blotting	1:1000
Chromatin IP	1:50
Chromatin IP-seq	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

ERR α (E1G1J) Rabbit mAb recognizes endogenous levels of total ERR α protein. This antibody does not cross-react with ERR family members ERR β and ERR γ , and does not cross-react with either ER α or ER β .

Species predicted to react based on 100% sequence homology

Bovine, Dog, Pig, Horse

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human ERR α protein.

Background

The estrogen-related receptor (ERR) subfamily of orphan nuclear receptors include three protein receptors, ERR α /NR3B1, ERR β /NR3B2, and ERR γ /NR3B3, that have yet to be associated with natural ligands. PGC-1 coactivators regulate ERR transcription activation ability and receptor-induced transcription of genes involved in lipid metabolism, glucose metabolism, and mitochondrial biogenesis (1).

Estrogen-related receptor α (ERR α /NR3B1) is an orphan nuclear receptor that controls transcription of genes involved in fatty acid oxidation, glucose metabolism, and mitochondrial biogenesis (1,2). The receptor protein contains a non-conserved amino terminal domain (NTD), a central zinc finger DNA binding domain, and a ligand-binding domain. The carboxy-terminal AF2 helix motif of ERR α contains binding sites for nuclear receptor coactivators PGC-1 α and PGC-1 β (3-5). Research studies demonstrate that ERR α transcriptional activity is regulated through phosphorylation and sumoylation within the NTD (6). ERR α is ubiquitously expressed, with strong expression observed in heart, kidneys, skeletal muscle, and other high metabolic demand tissues (2). Additional studies indicate that ERR α is coexpressed in breast tumors with unfavorable biomarkers (7). The pharmacologic inhibition of ERR α activity in breast cancer might serve as a valuable therapeutic approach (8,9).

Background References

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4. Schreiber, S.N. et al. (2003) *J Biol Chem* 278, 9013-8.
5. Kamei, Y. et al. (2003) *Proc Natl Acad Sci U S A* 100, 12378-83.
6. Tremblay, A.M. et al. (2008) *Mol Endocrinol* 22, 570-84.
7. Ariazi, E.A. et al. (2002) *Cancer Res* 62, 6510-8.
8. Chang, C.Y. et al. (2011) *Cancer Cell* 20, 500-10.
9. Deblouis, G. et al. (2009) *Cancer Res* 69, 6149-57.
10. Lanvin, O. et al. (2007) *J Biol Chem* 282, 28328-34.
11. Willy, P.J. et al. (2004) *Proc Natl Acad Sci U S A* 101, 8912-7.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween[®] 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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