Revision 4

Store at -20C

#13826

# ERRα (E1G1J) Rabbit mAb

Cell Signaling TECHNOLOGY®

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

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

## Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x $10^6$ 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 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

ERRα (E1G1J) Rabbit mAb recognizes endogenous levels of total ERRα protein. This antibody does not cross-react with ERR family members ERRβ and ERRγ, and does not cross-react with either ERα or ERβ.

## 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 ERRα protein.

## Background

The estrogen-related receptor (ERR) subfamily of orphan nuclear receptors include three protein receptors, ERRα/NR3B1, ERRβ/NR3B2, and ERRγ/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 (ERRα/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 ERRα contains binding sites for nuclear receptor coactivators PGC-1α and PGC-1β (3-5). Research studies demonstrate that ERRα transcriptional activity is regulated through phosphorylation and sumoylation within the NTD (6). ERRα is ubiquitously expressed, with strong expression observed in heart, kidneys, skeletal muscle, and other high metabolic demand tissues (2). Additional studies indicate that ERRα is coexpressed in breast tumors with unfavorable biomarkers (7). The pharmacologic inhibition of ERRα activity in breast cancer might serve as a valuable therapeutic approach (8,9).

## Background References

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6. Tremblay, A.M. et al. (2008) *Mol Endocrinol* 22, 570-84.
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9. Deblois, 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

## Trademarks and Patents



## Limited Uses