

#2129 Store at **-20°C**

Phospho-Rev-erb α (Ser55/59) Antibody

Small 100 μ l
 (10 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

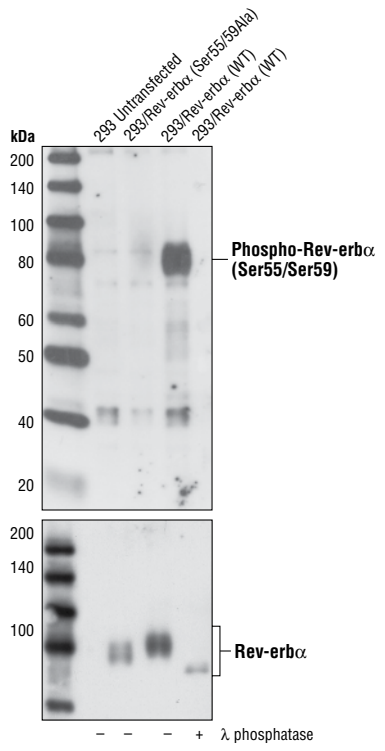
Entrez-Gene ID # 9572
Swiss-Prot Acc. # P20393

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W transfected	H, (M, R, B)	80 kDa	Rabbit**

Background: Reverse orientation c-erbA gene α (Rev-erb α , EAR-1, or NR1D1) is a widely expressed member of the orphan nuclear receptor family of proteins (1). Rev-erb α is highly expressed in adipose tissue, skeletal muscle, brain and liver, and regulates cellular proliferation and differentiation. Expression increases during differentiation in adipocytes and ectopic expression of Rev-erb α potentiates the adipocyte differentiation of 3T3-L1 cells (2). In addition, expression oscillates with circadian rhythm in liver cells and Rev-erb α regulates expression of BMAL1, ApoA-I and ApoC-III, all key regulators of circadian rhythm (3,4,5,6,7). Phosphorylation of Rev-erb α Ser55 and Ser59 by GSK3 β appears to stabilize Rev-erb α protein levels and is important for synchronizing and maintaining the circadian clock (8). Rev-erb α also regulates inflammation by targeting the NF- κ B responsive genes IL-6 and COX-2 (9). Rev-erb α lacks the activation function 2 domain required for ligand-dependent activation of transcription by other members of the nuclear receptor family; thus it behaves as a constitutive repressor protein, recruiting the nuclear receptor co-repressor (N-CoR)/HDAC3 complex to target genes to repress transcription (10).

Specificity/Sensitivity: Phospho-Rev-erb α (Ser55/59) Antibody detects transfected levels of Rev-erb α protein when phosphorylated at Ser55/59. The antibody does not cross-react with other nuclear receptor proteins, including Rev-erb β .

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser55 and Ser59 of human Rev-erb α . Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from 293 cells, either untransfected or transfected with DYKDDDDK-tagged Rev-erb α expression constructs, using Phospho-Rev-erb α (Ser55/Ser59) Antibody (upper) or DYKDDDDK Tag Antibody (Binds to same epitope as Sigma's Anti-FLAG[®] M2 Antibody) #2368 (lower). The phospho-specificity of the antibody was verified by transfecting cells with a mutant DYKDDDDK-Rev-erb α (Ser55/59Ala) expression construct and by incubating 293/Rev-erb α (WT) extracts with (+) or without (-) λ phosphatase.

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

***Species cross-reactivity is determined by western blot.**
****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:
 Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

- (1) Harding, H.P. and Lazar, M.A. (1993) *Mol. Cell Biol.* 13, 3113-3121.
- (2) Chawla, A. and Lazar, M.A. (1993) *J. Biol. Chem.* 268, 16265-16269.
- (3) Torra, I.P. et al. (2000) *Endocrinology* 141, 3799-3806.
- (4) Preitner, N. et al. (2002) *Cell* 110, 251-260.
- (5) Vu-Dac, N. et al. (1998) *J. Biol. Chem.* 273, 25713-25720.
- (6) Coste, H. and Rodríguez, J.C. (2002) *J. Biol. Chem.* 277, 27120-27129.
- (7) Raspé, E. et al. (2002) *J. Lipid Res.* 43, 2172-2179.
- (8) Yin, L. et al. (2006) *Science* 311, 1002-1005.
- (9) Migita, H. et al. (2004) *FEBS Lett.* 561, 69-74.
- (10) Yin, L. and Lazar, M.A. (2005) *Mol. Endocrinol.* 19, 1452-1459.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

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Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.