SANTA CRUZ BIOTECHNOLOGY, INC.

p-ERα (Ser 118): sc-12915

BACKGROUND

Estrogen receptor α (ERα, ER, ESR, ESRA, Era, NR3A1, estrogen receptor 1) is a ligand-activated transcription factor composed of several domains important for hormone binding, DNA binding and activation of transcription. Alternative splicing results in several ERα mRNA transcripts, which differ primarily in their 5' untranslated regions. ERα undergoes phosphorylation in response to estradiol binding. Human ERα is predominately phosphorylated on Ser 118 and, to a lesser extent, on Ser 104 and Ser 106. In response to activation of the mitogen-activated protein kinase pathway, phosphorylation occurs on Ser 118 and Ser 167. These Serine residues are all located within the activation function one region of the N-terminal domain of ERα. In contrast, activation of protein kinase A increases the phosphorylation of Ser 236, which is located in the DNA-binding domain. Src kinase-dependent Tyr 537 phosphorylation may enhance estrogen binding to ERα. Mutation of Tyr 537 of the human ERα produces receptors having a range of constitutive activity.

CHROMOSOMAL LOCATION

Genetic locus: ESR1 (human) mapping to 6q25.1; Esr1 (mouse) mapping to 10 A1.

SOURCE

p-ERα (Ser 118) is available as either goat (sc-12915) or rabbit (sc-12915-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 118 phosphorylated ERα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12915 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-ERα (Ser 118) is recommended for detection of Ser 118 phosphorylated ERα of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-ERα (Ser 118) is also recommended for detection of correspondingly phosphorylated ERα in additional species, including porcine and avian.

Suitable for use as control antibody for ERα siRNA (h): sc-29305, ERα siRNA (m): sc-29306, ERα shRNA Plasmid (h): sc-29305-SH, ERα shRNA Plasmid (m): sc-29306-SH, ERα shRNA (h) Lentiviral Particles: sc-29305-V and ERα shRNA (m) Lentiviral Particles: sc-29306-V.

Molecular Weight of p-ERα long isoform: 66 kDa.

Molecular Weight of p-ERα short isoform: 54 kDa.

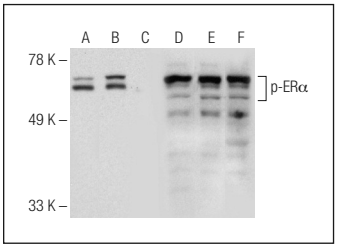
Molecular Weight of ER46: 48 kDa.

Molecular Weight of ER36: 36 kDa.

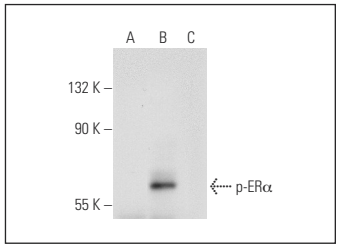
STORAGE

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

DATA



Western blot analysis of ERα phosphorylation in untreated (**A**,**D**), estradiol and EGF treated (**B**,**E**) and estradiol, EGF and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) MCF7 whole cell lysates. Antibody tested include p-ERα (Ser 118)-R: sc-12915-R (**A**,**B**,**C**) and ERα (H226): sc-53493 (**D**,**E**,**F**).



p-ERα (Ser 118)-R: sc-12915-R. Western blot analysis of ERα phosphorylation in untreated (**A**), EGF and estradiol treated (**B**) and EGF, estradiol and lambda protein phosphatase treated (**C**) MCF7 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Stirone, C., et al. 2003. Multiple forms of estrogen receptor-α in cerebral blood vessels: regulation by estrogen. Am. J. Physiol. Endocrinol. Metab. 284: E184-E192.
2. Thomas, N.B., et al. 2009. Growth of hormone-dependent MCF7 breast cancer cells is promoted by constitutive caveolin-1 whose expression is lost in an EGFR-mediated manner during development of tamoxifen resistance. Breast Cancer Res. Treat. 119: 575-591.
3. González, L., et al. 2009. Activation of the unliganded estrogen receptor by prolactin in breast cancer cells. Oncogene 28: 1298-1308.
4. Motomura, K., et al. 2010. Expression of estrogen receptor β and phosphorylation of estrogen receptor α serine 167 correlate with progression-free survival in patients with metastatic breast cancer treated with aromatase inhibitors. Oncology 79: 55-61.
5. Haim, K., et al. 2011. Epidermal growth factor and estrogen act by independent pathways to additively promote the release of the angiogenic chemokine CXCL8 by breast tumor cells. Neoplasia 13: 230-243.
6. Richardson, A.E., et al. 2011. Insulin-like growth factor-2 (IGF-2) activates estrogen receptor-α and -β via the IGF-1 and the Insulin receptors in breast cancer cells. Growth Factors 29: 82-93.
7. Clark, S., et al. 2014. Estrogen receptor-mediated transcription involves the activation of multiple kinase pathways in neuroblastoma cells. J. Steroid Biochem. Mol. Biol. 139: 45-53.
8. Zhang, S., et al. 2014. Uterine Rbpj is required for embryonic-uterine orientation and decidual remodeling via Notch pathway-independent and -dependent mechanisms. Cell Res. 24: 925-942.

RESEARCH USE

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