SANTA CRUZ BIOTECHNOLOGY, INC.

p-ERα (Ser 118): sc-101675

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 1 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.

REFERENCES

1. Arnold, S.F., et al. 1995. Phosphorylation of tyrosine 537 on the human estrogen receptor is required for binding to an estrogen response element. J. Biol. Chem. 270: 30205-30212.
2. Weis, K.E., et al. 1996. Constitutively active human estrogen receptors containing amino acid substitutions for tyrosine 537 in the receptor protein. Mol. Endocrinol. 10: 1388-1398.

CHROMOSOMAL LOCATION

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

SOURCE

p-ERα (Ser 118) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 118 phosphorylated ERα of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-ERα (Ser 118) is recommended for detection of Ser 118 phosphorylated ERα of human origin and correspondingly phosphorylated Ser 122 of mouse 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

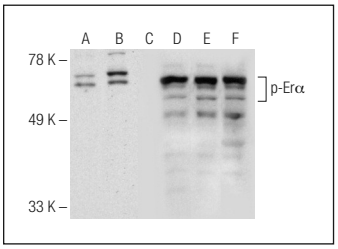
Molecular Weight of p-ERα: 66 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206.

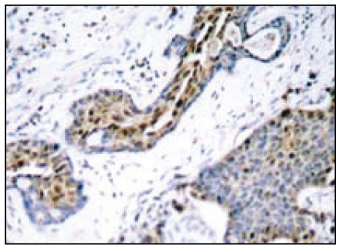
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

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): sc-101675 (**A**,**B**,**C**) and ERα (H226): sc-53493 (**D**,**E**,**F**).



p-ERα (Ser 118): sc-101675. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Cammarata, P.R., et al. 2004. Subcellular distribution of native estrogen receptor α and β subtypes in cultured human lens epithelial cells. Exp. Eye Res. 78: 861-871.
2. Lucchetti, C., et al. 2013. The prolyl isomerase Pin1 acts synergistically with CDK2 to regulate the basal activity of estrogen receptor α in breast cancer. PLoS ONE 8: e55355.
3. Xiong, J., et al. 2013. Lipoxin A4 blocks embryo implantation by controlling estrogen receptor α activity. Reproduction 145: 411-420.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.