

p-ER α (Ser 104/106): sc-12956

BACKGROUND

Estrogen receptor α (ER α , 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 ER α mRNA transcripts, which differ primarily in their 5' untranslated regions. ER α undergoes phosphorylation in response to estradiol binding. Human ER α 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 ER α . 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 ER α . Mutation of Tyr 537 of the human ER α produces receptors having a range of constitutive activity.

REFERENCES

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3. Arnold, S.F., et al. 1997. Estradiol-binding mechanism and binding capacity of the human estrogen receptor is regulated by tyrosine phosphorylation. *Mol. Endocrinol.* 11: 48-53.
4. Joel, P.B., et al. 1998. pp90Rsk-1 regulates estrogen receptor-mediated transcription through phosphorylation of Ser 167. *Mol. Cell Biol.* 18: 1978-1984.
5. Yudt, M.R., et al. 1999. Function of estrogen receptor tyrosine 537 in hormone binding, DNA binding and transactivation. *Biochemistry* 38: 14146-14156.
6. Zhong, L., et al. 2002. Mutations of tyrosine 537 in the human estrogen receptor- α selectively alter the receptor's affinity for estradiol and the kinetics of the interaction. *Biochemistry* 41: 4209-4217.
7. Lannigan, D.A. 2003. Estrogen receptor phosphorylation. *Steroids* 68: 1-9.
8. Simoncini, T., et al. 2004. Genomic and non-genomic effects of estrogens on endothelial cells. *Steroids* 69: 537-542.

CHROMOSOMAL LOCATION

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

SOURCE

p-ER α (Ser 104/106) is available as either goat (sc-12956) or rabbit (sc-12956-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 104 and Ser 106 phosphorylated ER α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-12956 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-ER α (Ser 104/106) is recommended for detection of Ser 104 and Ser 106 dually phosphorylated ER α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for ER α siRNA (h): sc-29305, ER α siRNA (m): sc-29306, ER α siRNA (r): sc-45949, ER α shRNA Plasmid (h): sc-29305-SH, ER α shRNA Plasmid (m): sc-29306-SH, ER α shRNA Plasmid (r): sc-45949-SH, ER α shRNA (h) Lentiviral Particles: sc-29305-V, ER α shRNA (m) Lentiviral Particles: sc-29306-V and ER α shRNA (r) Lentiviral Particles: sc-45949-V.

Molecular Weight of p-ER α long isoform: 66 kDa.

Molecular Weight of p-ER α short isoform: 54 kDa.

Molecular Weight of ER46: 48 kDa.

Molecular Weight of ER36: 36 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-12956): use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), for rabbit primary antibody (sc-12956-R): 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) Immunofluorescence: for goat primary antibody (sc-12956): use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941, for rabbit primary antibody (sc-12956-R): 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.

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.