

p-ER α (Ser 104): sc-101673

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

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.
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. pp90 Rsk-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.

SOURCE

p-ER α (Ser 104) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 104 phosphorylated ER α of human origin.

PRODUCT

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

APPLICATIONS

p-ER α (Ser 104) is recommended for detection of Ser 104 phosphorylated ER α of human origin by 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 ER α siRNA (h): sc-29305, ER α shRNA Plasmid (h): sc-29305-SH and ER α shRNA (h) Lentiviral Particles: sc-29305-V.

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

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

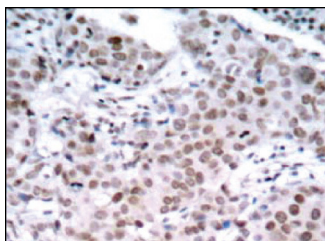
Molecular Weight of ER46: 48 kDa.

Molecular Weight of ER36: 36 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) 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. 2) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-ER α (Ser 104): sc-101673. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear localization.

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.