

## ER $\alpha$ (HC-20): sc-543

### BACKGROUND

Estrogen receptors (ER) are members of the steroid/thyroid hormone receptor superfamily of ligand-activated transcription factors. Estrogen receptors, including ER $\alpha$  and ER $\beta$ , contain DNA binding and ligand binding domains and are critically involved in regulating the normal function of reproductive tissues. ER $\alpha$  and ER $\beta$  have been shown to be differentially activated by various ligands. Receptor-ligand interactions trigger a cascade of events, including dissociation from heat shock proteins, receptor dimerization, phosphorylation and the association of the hormone activated receptor with specific regulatory elements in target genes. Evidence suggests that ER $\alpha$  and ER $\beta$  may be regulated by distinct mechanisms even though they share many functional characteristics.

### CHROMOSOMAL LOCATION

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

### SOURCE

ER $\alpha$  (HC-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of ER $\alpha$  of human origin.

### PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-543 X, 100  $\mu$ g/0.1 ml.

Blocking peptide available for competition studies, sc-543 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

### APPLICATIONS

ER $\alpha$  (HC-20) is recommended for detection of ER $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ER $\alpha$  (HC-20) is also recommended for detection of ER $\alpha$  in additional species, including bovine.

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

ER $\alpha$  (HC-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of ER $\alpha$  long isoform: 66 kDa.

Molecular Weight of ER $\alpha$  short isoform: 54 kDa.

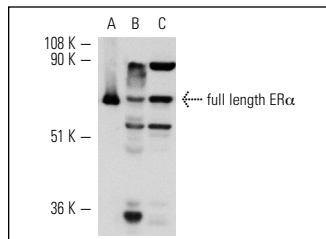
Molecular Weight of ER46: 48 kDa.

Molecular Weight of ER36: 36 kDa.

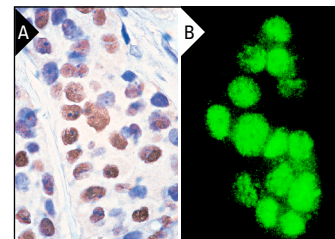
### STORAGE

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

### DATA



ER $\alpha$  (HC-20): sc-543. Western blot analysis of human recombinant ER $\alpha$  (A) and ER $\alpha$  expression in MCF7 nuclear extract (B) and T-47D whole cell lysate (C). Note amino terminal truncated form of ER $\alpha$ .



ER $\alpha$  (HC-20): sc-543. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing nuclear localization (A). Immunofluorescence staining of methanol-fixed T-47D cells showing nuclear localization (B).

### SELECT PRODUCT CITATIONS

- Xiong, W., et al. 2003. A positive-feedback-based bistable "memory module" that governs a cell fate decision. *Nature* 426: 460-465.
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- Ballare, C., et al. 2003. Two domains of the progesterone receptor interact with the estrogen receptor and are required for progesterone activation of the c-Src/Erk pathway in mammalian cells. *Mol. Cell. Biol.* 23: 1994-2008.
- Loven, M.A., et al. 2003. A novel estrogen receptor  $\alpha$ -associated protein, template-activating factor I $\beta$ , inhibits acetylation and transactivation. *Mol. Endocrinol.* 17: 67-78.
- Shankaranarayanan, P., et al. 2012. Single-tube linear DNA amplification for genome-wide studies using a few thousand cells. *Nat. Protoc.* 7: 328-338.
- Gambino, Y.P., et al. 2012. Regulation of leptin expression by 17 $\beta$ -estradiol in human placental cells involves membrane associated estrogen receptor  $\alpha$ . *Biochim. Biophys. Acta* 1823: 900-910.
- Giulianelli, S., et al. 2012. Estrogen receptor  $\alpha$  mediates progestin-induced mammary tumor growth by interacting with progesterone receptors at the Cyclin D1/MYC promoters. *Cancer Res.* 72: 2416-2427.

### RESEARCH USE

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

**MONOS**  
Satisfaction  
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Try **ER $\alpha$  (F-10): sc-8002** or **ER $\alpha$  (D-12): sc-8005**, our highly recommended monoclonal alternatives to ER $\alpha$  (HC-20).