

# Estrogen Receptor $\alpha$ (D-12): sc-8005

## 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. They are located in the nucleus, though some estrogen receptors associate with the cell surface membrane and can be rapidly activated by exposure of cells to estrogen. 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.

## REFERENCES

- Mason, B.H., et al. 1983. Progesterone and estrogen receptors as prognostic variables in breast cancer. *Cancer Res.* 43: 2985-2990.
- Evans, R.M. 1988. The steroid and thyroid hormone receptor superfamily. *Science* 240: 889-895.
- Danielian, P.S., et al. 1992. Identification of a conserved region required for hormone dependent transcriptional activation by steroid hormone receptors. *EMBO J.* 11: 1025-1033.

## CHROMOSOMAL LOCATION

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

## SOURCE

Estrogen Receptor  $\alpha$  (D-12) is a mouse monoclonal antibody raised against amino acids 2-185 mapping at the N-terminus of estrogen receptor of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain 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-8005 X, 200  $\mu$ g/0.1 ml.

Estrogen Receptor  $\alpha$  (D-12) is available conjugated to agarose (sc-8005 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8005 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8005 PE), fluorescein (sc-8005 FITC), Alexa Fluor<sup>®</sup> 488 (sc-8005 AF488), Alexa Fluor<sup>®</sup> 546 (sc-8005 AF546), Alexa Fluor<sup>®</sup> 594 (sc-8005 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-8005 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-8005 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-8005 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Estrogen Receptor  $\alpha$  (D-12) is available conjugated to TRITC (sc-8005 TRITC, 200  $\mu$ g/ml), for IF, IHC(P) and FCM.

## RESEARCH USE

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

## APPLICATIONS

Estrogen Receptor  $\alpha$  (D-12) is recommended for detection of Estrogen Receptor  $\alpha$  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).

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

Estrogen Receptor  $\alpha$  (D-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

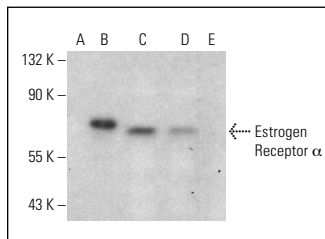
Molecular Weight of Estrogen Receptor  $\alpha$  short isoform: 54 kDa.

Molecular Weight of ER46: 48 kDa.

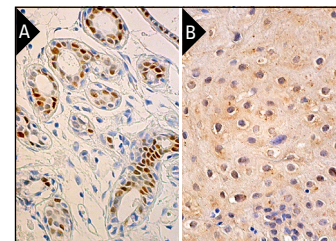
Molecular Weight of ER36: 36 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, T-47D cell lysate: sc-2293 or ZR-75-1 cell lysate: sc-2241.

## DATA



Estrogen Receptor  $\alpha$  (D-12): sc-8005. Western blot analysis of Estrogen Receptor  $\alpha$  expression in non-transfected HEK293T (A), human Estrogen Receptor  $\alpha$  transfected HEK293T (B), MCF7 (C), T-47D (D) and SK-BR-3 (E) whole cell lysates. Note lack of reactivity in lane E (Estrogen Receptor negative cell line).



ER $\alpha$  (D-12): sc-8005. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing nuclear staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cervix tissue showing nuclear staining of subset of squamous epithelial cells (B).

## SELECT PRODUCT CITATIONS

- Speir, E., et al. 2000. Competition for p300 regulates transcription by estrogen receptors and nuclear factor- $\kappa$ B in human coronary smooth muscle cells. *Circ. Res.* 87: 1006-1011.

## STORAGE

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

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