SANTA CRUZ BIOTECHNOLOGY, INC.

ERα (D547): sc-53490

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Estrogen receptors (ER) are members of the steroid/thyroid hormone receptor superfamily of ligand-activated transcription factors. Estrogen receptors, including ERα and ERβ, 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. ERα and ERβ 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 ERα and ERβ may be regulated by distinct mechanisms even though they share many functional characteristics.

REFERENCES

1. Mason, B.H., et al. 1983. Progesterone and estrogen receptors as prognostic variables in breast cancer. Cancer Res. 43: 2985-2990.
2. Evans, R.M. 1988. The steroid and thyroid hormone receptor superfamily. Science 240: 889-895.
3. 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.
4. Kliewer, S.A., et al. 1992. Retinoid X receptor interacts with nuclear receptors in retinoic acid, thyroid hormone and vitamin D_3 signalling. Nature 355: 446-449.
5. Arnold, S.F., et al. 1995. Phosphorylation of the human estrogen receptor on Tyrosine 537 *in vivo* and by Src family tyrosine kinases *in vitro*. Mol. Endocrinol. 9: 24-33.
6. Mosselman, S., et al. 1996. ERβ: identification and characterization of a novel human estrogen receptor. FEBS Lett. 392: 49-53.
7. Byers, M., et al. 1997. ERβ mRNA expression in rat ovary: downregulation by gonadotropins. Mol. Endocrinol. 11: 172-182.
8. Tremblay, G.B., et al. 1997. Cloning, chromosomal localization, and functional analysis of the murine estrogen receptor β. Mol. Endocrinol. 11: 353-365.

CHROMOSOMAL LOCATION

Genetic locus: ESR1 (human) mapping to 6q25.1.

SOURCE

ERα (D547) is a rat monoclonal antibody raised against estrogen receptor derived from MCF-7 human breast cancer cells.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ERα (D547) is recommended for detection of ERα of human and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for ERα siRNA (h): sc-29305, ERα shRNA Plasmid (h): sc-29305-SH and ERα shRNA (h) Lentiviral Particles: sc-29305-V.

Molecular Weight of ERα long isoform: 66 kDa.

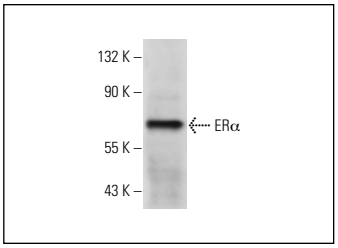
Molecular Weight of ERα short isoform: 54 kDa.

Molecular Weight of ER46: 48 kDa.

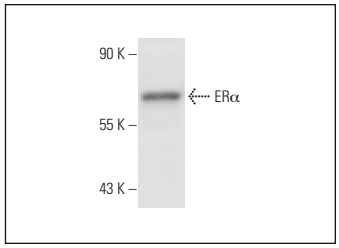
Molecular Weight of ER36: 36 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, MCF7 nuclear extract: sc-2149 or T-47D cell lysate: sc-2293.

DATA



ERα (D547): sc-53490. Western blot analysis of ERα expression in T-47D whole cell lysate.



ERα (D547): sc-53490. Western blot analysis of ERα expression in T-47D whole cell lysate.

SELECT PRODUCT CITATIONS

1. Houtman, R., et al. 2012. Serine-305 phosphorylation modulates estrogen receptor α binding to a coregulator peptide array, with potential application in predicting responses to tamoxifen. Mol. Cancer Ther. 11: 805-816.

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 for detailed protocols and support products.

CONJUGATES

See **ERα (C-3): sc-514857** for ERα antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.