SANTA CRUZ BIOTECHNOLOGY, INC.

Estrogen Receptor α (H222): sc-53492

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.

CHROMOSOMAL LOCATION

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

SOURCE

Estrogen Receptor α (H222) is a rat monoclonal antibody raised against Estrogen Receptor α of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Estrogen Receptor α (H222) is available conjugated to agarose (sc-53492 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53492 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53492 PE), fluorescein (sc-53492 FITC), Alexa Fluor® 488 (sc-53492 AF488), Alexa Fluor® 546 (sc-53492 AF546), Alexa Fluor® 594 (sc-53492 AF594) or Alexa Fluor® 647 (sc-53492 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53492 AF680) or Alexa Fluor® 790 (sc-53492 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Estrogen Receptor α (H222) is recommended for detection of Estrogen Receptor α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

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

Molecular Weight of Estrogen Receptor α long isoform: 66 kDa.

Molecular Weight of Estrogen Receptor α 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 MCF7 nuclear extract: sc-2149.

SELECT PRODUCT CITATIONS

1. Kurosawa, T., et al. 2010. Clomiphene citrate elicits estrogen agonistic/antagonistic effects differentially via Estrogen Receptors α and β. Endocr. J. 57: 517-521.
2. Cyr, N.E., et al. 2010. Nuclear Thimet oligopeptidase is coexpressed with Oestrogen Receptor α in hypothalamic cells and regulated by oestradiol in female mice. J. Neuroendocrinol. 22: 936-943.
3. Bruce, L.A., et al. 2012. Neuropeptidase activity is down-regulated by estradiol in steroid-sensitive regions of the hypothalamus in female mice. Neuropeptides 46: 167-172.
4. Zhang, J., et al. 2014. Aging-related changes in RP3V kisspeptin neurons predate the reduced activation of GnRH neurons during the early reproductive decline in female mice. Neurobiol. Aging 35: 655-668.
5. Srinivasan, S., et al. 2016. Full antagonism of the estrogen receptor without a prototypical ligand side chain. Nat. Chem. Biol. 13: 111-118.
6. Maczis, M.A., et al. 2018. Sphingosine kinase 1 activation by Estrogen Receptor α36 contributes to tamoxifen resistance in breast cancer. J. Lipid Res. 59: 2297-2307.
7. Min, J., et al. 2021. Dual-mechanism estrogen receptor inhibitors. Proc. Natl. Acad. Sci. USA 118: e2101657118.
8. Solis, O., et al. 2022. The SARS-CoV-2 spike protein binds and modulates estrogen receptors. bioRxiv. E-published.

RESEARCH USE

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