

# ERβ (B-3): sc-373853

## 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. Green, S., et al. 1986. Human oestrogen receptor cDNA: sequence, expression and homology to v-Erb-A. *Nature* 320: 134-139.
2. Katzenellenbogen, B.S., et al. 1987. Structural analysis of covalently labeled estrogen receptors by limited and monoclonal antibody reactivity. *Biochemistry* 26: 2364-2373.

## CHROMOSOMAL LOCATION

Genetic locus: ESR2 (human) mapping to 14q23.2.

## SOURCE

ERβ (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-29 at the N-terminus of ERβ of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</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-373853 X, 200 µg/0.1 ml.

ERβ (B-3) is available conjugated to agarose (sc-373853 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373853 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373853 PE), fluorescein (sc-373853 FITC), Alexa Fluor® 488 (sc-373853 AF488), Alexa Fluor® 546 (sc-373853 AF546), Alexa Fluor® 594 (sc-373853 AF594) or Alexa Fluor® 647 (sc-373853 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373853 AF680) or Alexa Fluor® 790 (sc-373853 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-373853 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## STORAGE

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

## APPLICATIONS

ERβ (B-3) is recommended for detection of ERβ of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

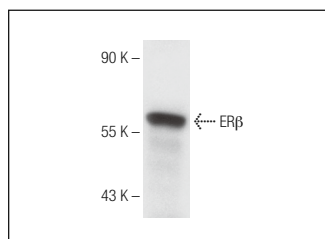
Suitable for use as control antibody for ERβ siRNA (h): sc-35325, ERβ shRNA Plasmid (h): sc-35325-SH and ERβ shRNA (h) Lentiviral Particles: sc-35325-V.

ERβ (B-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

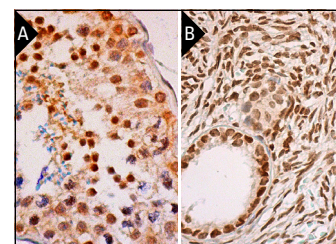
Molecular Weight of ERβ: 56 kDa.

Positive Controls: human liver extract: sc-363766.

## DATA



ERβ (B-3): sc-373853. Western blot analysis of ERβ expression in human liver tissue extract.



ERβ (B-3): sc-373853. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and Leydig cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of follicle cells and ovarian stroma cells (B).

## SELECT PRODUCT CITATIONS

1. Du, M.J., et al. 2014. Estrogen induces Vav1 expression in human breast cancer cells. *PLoS ONE* 9: e99052.
2. Riera-Leal, A., et al. 2018. Effects of 60 kDa prolactin and estradiol on metabolism and cell survival in cervical cancer: co-expression of their hormonal receptors during cancer progression. *Oncol. Rep.* 40: 3781-3793.
3. Wei, Y., et al. 2019. ERβ promotes Aβ degradation via the modulation of autophagy. *Cell Death Dis.* 10: 565.
4. Fan, M., et al. 2020. Triggering a switch from basal- to luminal-like breast cancer subtype by the small-molecule diptoindone G via induction of GABARAP1. *Cell Death Dis.* 11: 635.
5. Zhou, W., et al. 2021. LncRNA APTR promotes uterine leiomyoma cell proliferation by targeting ERα to activate the Wnt/β-catenin pathway. *Front. Oncol.* 11: 536346.

## RESEARCH USE

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