# ERRβ (h): 293T Lysate: sc-128549



The Power to Question

## **BACKGROUND**

Estrogen and progesterone receptors are members of a family of transcription factors that are regulated by the binding of their cognate ligands. The interaction of hormone-bound estrogen receptors with estrogen responsive elements (EREs) alters transcription of ERE-containing genes. Estrogen receptor-related proteins (ERR $\alpha$ ,  $\beta$  and  $\gamma$ ) are orphan nuclear receptors. Like estrogen receptors, ERRs bind specifically to EREs to activate reporter genes. ERR $\beta$ , also known as steroid hormone receptor ERR2 or estrogen receptor-like 2, contains a DNA binding domain and is highly homologous to ERR $\alpha$ . ERR $\beta$  is expressed during mammary gland development and is critical in embryo development. It is expressed in a subset of diploid trophoblast cells which make up the chorion. The loss of ERR $\beta$  results in severely impaired chorion formation leading to placental failure and embryonic death. This suggests that ERR $\beta$  may be necessary for the proper formation or function of the chorion. In addition, ERR $\beta$  potently represses the transcriptional activity of Nrf2.

## **REFERENCES**

- Luo, J., Sladek, R., Bader, J.A., Matthyssen, A., Rossant, J. and Giguère, V. 1997. Placental abnormalities in mouse embryos lacking the orphan nuclear receptor ERRβ. Nature 388: 778-782.
- Hong, H., Yang, L. and Stallcup, M.R. 1999. Hormone-independent transcriptional activation and coactivator binding by novel orphan nuclear receptor ERR3. J. Biol. Chem. 274: 22618-22626.
- Chen, F., Zhang, Q., McDonald, T., Davidoff, M.J., Bailey, W., Bai, C., Liu, Q. and Caskey, C.T. 1999. Identification of two hERR2-related novel nuclear receptors utilizing bioinformatics and inverse PCR. Gene 228: 101-109.
- Greschik, H., Wurtz, J.M., Sanglier, S., Bourguet, W., van Dorsselaer, A., Moras, D. and Renaud, J.P. 2002. Structural and functional evidence for ligand-independent transcriptional activation by the estrogen-related receptor 3. Mol. Cell 9: 303-313.
- Cheung, C.P., Yu, S., Wong, K.B., Chan, L.W., Lai, F.M., Wang, X., Suetsugi, M., Chen, S. and Chan, F.L. 2005. Expression and functional study of estrogen receptor-related receptors in human prostatic cells and tissues. J. Clin. Endocrinol. Metab. 90: 1830-1844.
- 6. Gearhart, M.D., Dickinson, L., Ehley, J., Melander, C., Dervan, P.B., Wright, P.E. and Gottesfeld, J.M. 2005. Inhibition of DNA binding by human estrogen-related receptor 2 and estrogen receptor  $\alpha$  with minor groove binding polyamides. Biochemistry 44: 4196-4203.
- 7. Zhou, W., Liu, Z., Wu, J., Liu, J.H., Hyder, S.M., Antoniou, E. and Lubahn, D.B. 2006. Identification and characterization of two novel splicing isoforms of human estrogen-related receptor  $\beta$ . J. Clin. Endocrinol. Metab. 91: 569-579.
- 8. Zhou, W., Lo, S.C., Liu, J.H., Hannink, M. and Lubahn, D.B. 2007. ERRβ: a potent inhibitor of Nrf2 transcriptional activity. Mol. Cell. Endocrinol. 278: 52-62.

#### **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## **CHROMOSOMAL LOCATION**

Genetic locus: ESRRB (human) mapping to 14q24.3.

#### **PRODUCT**

ERR $\beta$  (h): 293T Lysate represents a lysate of human ERR $\beta$  transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

# **APPLICATIONS**

ERR $\beta$  (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive ERR $\beta$  antibodies. Recommended use: 10-20  $\mu$ l per lane.

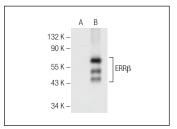
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

ERR $\beta/\gamma$  (E-1): sc-376449 is recommended as a positive control antibody for Western Blot analysis of enhanced human ERR $\beta$  expression in ERR $\beta$  transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

#### **RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgG $\kappa$  BP-HRP: sc-516102 or m-lgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

# DATA



ERRβ/γ (E-1): sc-376449. Western blot analysis of ERRβ expression in non-transfected: sc-117752 (A) and human ERRβ transfected: sc-128549 (B) 293T whole cell lysates

## **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.