SANTA CRUZ BIOTECHNOLOGY, INC.

17β-HSD4 (H-300): sc-135045

BACKGROUND

17β-HSD4 (17β-hydroxysteroid dehydrogenase type 4) is also known as peroxisomal multifunctional enzyme/protein 2 (MFE-2/MFP-2), D-bifunctional enzyme or 17-β Estradiol dehydrogenase type IV. It belongs to the 17β-HSD family of proteins that regulate the availability of steroids within various tissues throughout the body. 17β-HSD4 inactivates Estradiol through its oxidative activity but it is primarily involved in peroxisomal fatty acid and cholesterol β-oxidation. It has a multi-domain structure: the dehydrogenase domain is fused to a hydratase and a lipid transfer domain. 17β-HSD4 is a target protein of chromeceptin and it is essential for the downstream activation of Stat6. 17β-HSD4-deficient patients exhibit Zellweger-like syndrome and die within the first year of life. They display neuronal migration defects, facial dysmorphisms, severe hypotonia and convulsions in the neonatal period.

REFERENCES

1. Husen, B., et al. 2000. Differential expression of 17β-hydroxysteroid dehydrogenases types 2 and 4 in human endometrial epithelial cell lines. J. Mol. Endocrinol. 24: 135-144.
2. Breitling, R., et al. 2001. Evolution of 17β-HSD type 4, a multifunctional protein of β-oxidation. Mol. Cell. Endocrinol. 171: 205-210.
3. Kobayashi, K., et al. 2004. Expression of estrogen receptor α and 17β-hydroxysteroid dehydrogenase 4 in the ciliary body. Graefes Arch. Clin. Exp. Ophthalmol. 242: 172-176.
4. Nagayoshi, Y., et al. 2005. Characterization of 17β-hydroxysteroid dehydrogenase type 4 in human ovarian surface epithelial cells. Mol. Hum. Reprod. 11: 615-621.
5. Otsuka, M., et al. 2005. Vitamin K2 binds 17β-hydroxysteroid dehydrogenase 4 and modulates estrogen metabolism. Life Sci. 76: 2473-2482.
6. Nguyen, T., et al. 2006. Failure of microtubule-mediated peroxisome division and trafficking in disorders with reduced peroxisome abundance. J. Cell. Sci. 119: 636-645.
7. Huyghe, S., et al. 2006. Peroxisomal multifunctional protein 2 is essential for lipid homeostasis in sertoli cells and male fertility in mice. Endocrinology 147: 2228-2236.
8. Huyghe, S., et al. 2006. Peroxisomal multifunctional protein-2 deficiency causes motor deficits and glial lesions in the adult central nervous system. Am. J. Pathol. 168: 1321-1334.
9. Choi, Y., et al. 2006. Chemical genetic identification of the IGF-linked pathway that is mediated by Stat6 and MFP2. Chem. Biol. 13: 241-249.

CHROMOSOMAL LOCATION

Genetic locus: HSD17B4 (human) mapping to 5q23.1; Hsd17b4 (mouse) mapping to 18 D1.

SOURCE

17β-HSD4 (H-300) is a rabbit polyclonal antibody raised against amino acids 31-330 mapping within an internal region of 17β-HSD4 of human origin.

PRODUCT

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

APPLICATIONS

17β-HSD4 (H-300) is recommended for detection of 17β-HSD4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

17β-HSD4 (H-300) is also recommended for detection of 17β-HSD4 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for 17β-HSD4 siRNA (h): sc-61918, 17β-HSD4 siRNA (m): sc-61919, 17β-HSD4 shRNA Plasmid (h): sc-61918-SH, 17β-HSD4 shRNA Plasmid (m): sc-61919-SH, 17β-HSD4 shRNA (h) Lentiviral Particles: sc-61918-V and 17β-HSD4 shRNA (m) Lentiviral Particles: sc-61919-V.

Molecular Weight of 17β-HSD4: 81 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.

MONOS Satisfaction Guaranteed

Try **17β-HSD4 (A-6): sc-365167** or **17β-HSD4 (B-5): sc-271825**, our highly recommended monoclonal alternatives to 17β-HSD4 (H-300).