SANTA CRUZ BIOTECHNOLOGY, INC.

CYP17A1 (N-17): sc-46084

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies, such as CYP1A, CYP2A, CYP2C, CYP2D, CYP4A14, CYP7A, CYP7B, CYP8B, CYP11A, CYP17A1, CYPI9 and CYP27A, based on sequence similarities. CYP17A (17α-hydroxylase/17,20-lyase) is important for the conversion of pregnenolone and progesterone to dehydroepiandrosterone (DHEA) and androstenedione. In this process, it catalyzes both the 17α-hydroxylation and the 17,20-lyase reaction. CYP17A1 is crucial during sexual development, both during fetal development and during puberty, and is intracellularly regulated by cAMP levels. Defects in the CYP17A1 gene, which encodes for the protein, may cause adrenal hyperplasia type V (AH-V) which is characterized by hypokalemia and hypertension. Male patients affected by AH-V do not undergo normal sexual differentiation and develop female external genitalia and do not undergo pubertal develoment.

CHROMOSOMAL LOCATION

Genetic locus: CYP17A1 (human) mapping to 10q24.32.

SOURCE

CYP17A1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CYP17A1 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.

Blocking peptide available for competition studies, sc-46084 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP17A1 (N-17) is recommended for detection of CYP17A1 of 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), 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 CYP17A1 siRNA (h): sc-45641, CYP17A1 shRNA Plasmid (h): sc-45641-SH and CYP17A1 shRNA (h) Lentiviral Particles: sc-45641-V.

Molecular Weight of CYP17A1: 55 kDa.

Positive Controls: SW-13 cell lysate: sc-24778, ES-2 cell lysate: sc-24674 or CYP17A1 (h2): 293T Lysate: sc-116774.

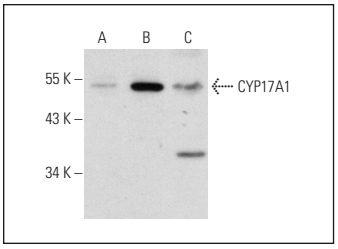
STORAGE

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

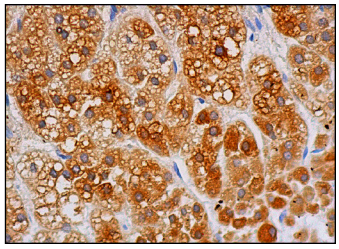
RESEARCH USE

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

DATA



CYP17A1 (N-17): sc-46084. Western blot analysis of CYP17A1 expression in non-transfected 293T: sc-117752 (**A**), human CYP17A1 transfected 293T: sc-116774 (**B**) and ES-2 (**C**) whole cell lysates.



CYP17A1 (N-17): sc-46084. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Karpeta, A., et al. 2011. Congener-specific action of PBDEs on steroid secretion, CYP17, 17β-HSD and CYP19 activity and protein expression in porcine ovarian follicles. Toxicol. Lett. 206: 258-263.
2. Gregoraszczuk, E.L., et al. 2011. Differential accumulation of HCBz and PeCBz in porcine ovarian follicles and their opposing actions on steroid secretion and CYP11, CYP17, 17β-HSD and CYP19 protein expression. A tissue culture approach. Reprod. Toxicol. 31: 494-499.
3. Chen, Y., et al. 2011. Cytochrome P450 17 (CYP17) is involved in endometrial cancinogenesis through apoptosis and invasion pathways. Mol. Carcinog. 50: 16-23.
4. Schonemann, M.D., et al. 2012. Expression of P450c17 in the human fetal nervous system. Endocrinology 153: 2494-2505.
5. Li, S., et al. 2012. The effects of dexamethasone treatment in early gestation on hypothalamic-pituitary-adrenal responses and gene expression at 7 months of postnatal age in sheep. Reprod. Sci. 19: 260-270.
6. Rak-Mardy, A.A., et al. 2013. Effects of resistin on porcine ovarian follicle steroidogenesis in prepubertal animals: an *in vitro* study. Reprod. Biol. Endocrinol. 11: 45.
7. Gregoraszczuk, E.L. and Rak-Mardyla, A. 2013. Supraphysiological leptin levels shift the profile of steroidogenesis in porcine ovarian follicles toward progesterone and testosterone secretion through increased expressions of CYP11A1 and 17β-HSD: a tissue culture approach. Reproduction 145: 311-317.