SANTA CRUZ BIOTECHNOLOGY, INC.

CYP17A1 (D-12): sc-374244

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 17-α-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 development.

CHROMOSOMAL LOCATION

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

SOURCE

CYP17A1 (D-12) is a mouse monoclonal antibody raised against amino acids 461-508 mapping at the C-terminus of CYP17A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP17A1 (D-12) is available conjugated to agarose (sc-374244 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374244 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374244 PE), fluorescein (sc-374244 FITC), Alexa Fluor® 488 (sc-374244 AF488), Alexa Fluor® 546 (sc-374244 AF546), Alexa Fluor® 594 (sc-374244 AF594) or Alexa Fluor® 647 (sc-374244 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374244 AF680) or Alexa Fluor® 790 (sc-374244 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP17A1 (D-12) is recommended for detection of CYP17A1 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 CYP17A1 siRNA (h): sc-45641, CYP17A1 shRNA Plasmid (h): sc-45641-SH and CYP17A1 shRNA (h) Lentiviral Particles: sc-45641-V.

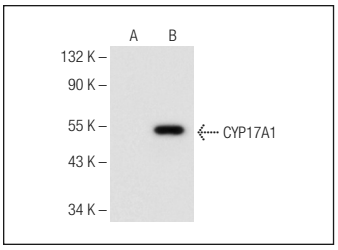
Molecular Weight of CYP17A1: 55 kDa.

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

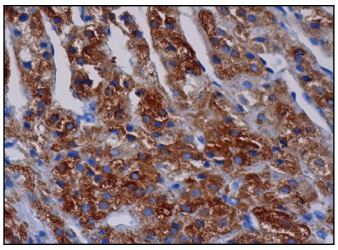
STORAGE

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

DATA



CYP17A1 (D-12): sc-374244. Western blot analysis of CYP17A1 expression in non-transfected: sc-117752 (**A**) and human CYP17A1 transfected: sc-116774 (**B**) 293T whole cell lysates.



CYP17A1 (D-12): sc-374244. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Savchuk, I., et al. 2019. Ontogenesis of human fetal testicular steroidogenesis at early gestational age. Steroids 141: 96-103.
2. Chen, F., et al. 2020. ERO1α promotes testosterone secretion in hCG-stimulated mouse Leydig cells via activation of the PI3K/Akt/mTOR signaling pathway. J. Cell. Physiol. 235: 5666-5678.
3. Wang, X.T., et al. 2020. Malignant melanotic Xp11 neoplasms exhibit a clinicopathological spectrum and gene expression profiling akin to alveolar soft part sarcoma: a proposal for reclassification. J. Pathol. 251: 365-377.
4. Di Dalmazi, G., et al. 2020. DNA methylation of steroidogenic enzymes in benign adrenocortical tumors: new insights in Aldosterone-producing adenomas. J. Clin. Endocrinol. Metab. 105: dgaa585.
5. Nakayama, A., et al. 2021. Effects of curcumin combined with the 5-α reductase inhibitor dutasteride on LNCaP prostate cancer cells. In Vivo 35: 1443-1450.
6. Guo, J., et al. 2021. Single-cell analysis of the developing human testis reveals somatic niche cell specification and fetal germline stem cell establishment. Cell Stem Cell 28: 764-778.e4.
7. Xu, F., et al. 2021. Matrix-free 3D culture supports human follicular development from the unilaminar to the antral stage *in vitro* yielding morphologically normal metaphase II oocytes. Hum. Reprod. 36: 1326-1338.
8. Cham, T.C., et al. 2021. Generation of a highly biomimetic organoid, including vasculature, resembling the native immature testis tissue. Cells 10: 1696.
9. Ilhan, R., et al. 2022. Novel regulation mechanism of adrenal cortisol and DHEA biosynthesis via the endogen ERAD inhibitor small VCP-interacting protein. Sci. Rep. 12: 869.

RESEARCH USE

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