SANTA CRUZ BIOTECHNOLOGY, INC.

CYP11B1 (A-11): sc-377401

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The steroid 11β-hydroxylase gene, also designated Cyp11b-1, is a marker for the functional differentiation of cells in the zonae fasciculata reticularis. The deduced protein CYP11B1 consists of 466 amino acids containing a secretory signal, epidermal growth factor-like repeats, and a proteolytically inactive cathepsin B-related sequence. A related protein, human aldosterone synthase (CYP11B2), is involved in substrate recognition and conversion, with a functionally significant residue 112 in the N-terminal region of human CYP11B2. The inherited disorder glucocorticoid-remediable aldosteronism iscaused by a chimeric gene duplication between the CYP11B1 and CYP11B2 genes. This disorder is characterized by hyperaldosteronism and high levels of 18-hydroxycortisol and 18-oxocortisol, which are under ACTH control.

CHROMOSOMAL LOCATION

Genetic locus: Cyp11b1 (mouse) mapping to 1 D.

SOURCE

CYP11B1 (A-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 367-397 within an internal region of CYP11B1 of rat 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.

CYP11B1 (A-11) is available conjugated to agarose (sc-377401 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377401 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377401 PE), fluorescein (sc-377401 FITC), Alexa Fluor® 488 (sc-377401 AF488), Alexa Fluor® 546 (sc-377401 AF546), Alexa Fluor® 594 (sc-377401 AF594) or Alexa Fluor® 647 (sc-377401 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377401 AF680) or Alexa Fluor® 790 (sc-377401 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377401 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CYP11B1 (A-11) is recommended for detection of CYP11B1 of mouse and rat 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 CYP11B1 siRNA (m): sc-44796, CYP11B1 shRNA Plasmid (m): sc-44796-SH and CYP11B1 shRNA (m) Lentiviral Particles: sc-44796-V.

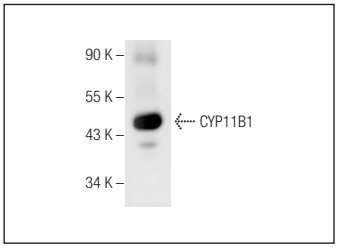
Molecular Weight of CYP11B1: 48 kDa.

Positive Controls: rat adrenal gland extract: sc-364802.

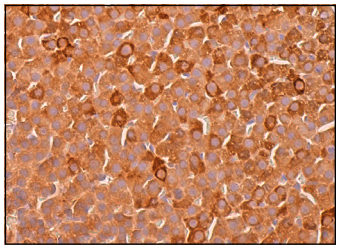
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CYP11B1 (A-11): sc-377401. Western blot analysis of CYP11B1 expression in rat adrenal gland tissue extract.



CYP11B1 (A-11): sc-377401. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat adrenal gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Etchevers, L., et al. 2021. MC2R/MRAP2 activation could affect bovine ovarian steroidogenesis potential after ACTH treatment. Theriogenology 174: 102-113.
2. Saxu, R., et al. 2023. Asymmetries of left and right adrenal glands in neural innervation and glucocorticoids production. Int. J. Mol. Sci. 24: 17456.
3. Martinelli, S., et al. 2024. The 3D *in vitro* Adrenoid cell model recapitulates the complexity of the adrenal gland. Sci. Rep. 14: 8044.

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 for detailed protocols and support products.