SANTA CRUZ BIOTECHNOLOGY, INC.

CYP11B1 (B-11): sc-377248

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.

REFERENCES

1. Fardella, C.E., et al. 2001. Genetic study of patients with dexamethasone-suppressible aldosteronism without the chimeric CYP11B1/CYP11B2 gene. J. Clin. Endocrinol. Metab. 86: 4805-4807.
2. Bechtel, S., et al. 2002. The effect of amino-acid substitutions I112P, D147E and K152N in CYP11B2 on the catalytic activities of the enzyme. Eur. J. Biochem. 269: 1118-1127.
3. Mukai, K., et al. 2003. An inverse correlation between expression of a pre-procathepsin B-related protein with cysteine-rich sequences and steroid 11β-hydroxylase in adrenocortical cells. J. Biol. Chem. 278: 17084-17092.
4. Ganapathipillai, S., et al. 2005. CYP11B2-CYP11B1 haplotypes associated with decreased 11β-hydroxylase activity. J. Clin. Endocrinol. Metab. 90: 1220-1225.
5. Krone, N., et al. 2005. Congenital adrenal hyperplasia due to 11-hydroxylase deficiency: functional characterization of two novel point mutations and a three-base pair deletion in the CYP11B1 gene. J. Clin. Endocrinol. Metab. 90: 3724-3730.
6. Barr, M., et al. 2006. Functional effects of genetic variants in the 11β-hydroxylase (CYP11B1) gene. Clin. Endocrinol. 65: 816-825.
7. Hakki, T., et al. 2008. Coexpression of redox partners increases the hydrocortisone (cortisol) production efficiency in CYP11B1 expressing fission yeast *Schizosaccharomyces pombe*. J. Biotechnol. 133: 351-359.

CHROMOSOMAL LOCATION

Genetic locus: Cyp11b1 (mouse) mapping to 15 D3.

SOURCE

CYP11B1 (B-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.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377248 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CYP11B1 (B-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) 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.

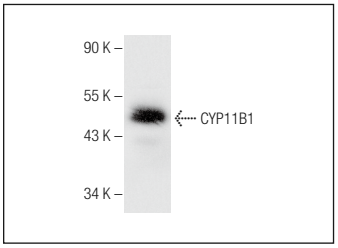
Molecular Weight of CYP11B1: 48 kDa.

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.

DATA



CYP11B1 (B-11): sc-377248. Western blot analysis of CYP11B1 expression in rat adrenal gland tissue extract.

SELECT PRODUCT CITATIONS

1. Chong, C., et al. 2017. Regulation of aldosterone secretion by mineralocorticoid receptor-mediated signaling. J. Endocrinol. 232: 525-534.

RESEARCH USE

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