SANTA CRUZ BIOTECHNOLOGY, INC.

CYP3A (H-10): sc-390768

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

CYP3A genes encode monooxygenases, enzymes which catalyze drug metabolism and the synthesis of cholesterol, steroids and other lipids. CYP3A (cytochrome P450, family 3, subfamily A), the most abundant p450 enzyme in human liver, is responsible for the metabolism of more than 50% of all clinical drugs. CYP3A members localize in organs that associate with drug disposition, including the liver, gastrointestinal tract and kidney. The CYP3A cluster consists of four genes: CYP3A43, CYP3A4, CYP3A7 and CYP3A5, and two pseudogenes: CYP3A5P1 and CYP3A5P2. The CYP3A cluster maps to gene locus 7q22.1.

REFERENCES

1. Paulussen, A., et al. 2000. Two linked mutations in transcriptional regulatory elements of the CYP3A5 gene constitute the major genetic determinant of polymorphic activity in humans. Pharmacogenetics 10: 415-424.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606534. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Williams, P.A., et al. 2004. Crystal structures of human cytochrome P450 3A4 bound to metyrapone and progesterone. Science 305: 683-686.
4. Stedman, C., et al. 2004. Feed-forward regulation of bile acid detoxification by CYP3A4: studies in humanized transgenic mice. J. Biol. Chem. 279: 11336-11343.
5. Persson, K.P., et al. 2006. Evaluation of human liver slices and reporter gene assays as systems for predicting the cytochrome P450 induction potential of drugs *in vivo* in humans. Pharm. Res. 23: 56-69.
6. Hidaka, M., et al. 2006. Transient inhibition of CYP3A in rats by star fruit juice. Drug Metab. Dispos. 34: 343-345.
7. Mueller, S.C., et al. 2006. The extent of induction of CYP3A by St. John's wort varies among products and is linked to hyperforin dose. Eur. J. Clin. Pharmacol. 62: 29-36.
8. LocusLink Report (LocusID: 1574). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: CYP3A4/CYP3A5/CYP3A7/CYP3A43 (human) mapping to 7q22.1.

SOURCE

CYP3A (H-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 398-421 of CYP3A7 of human origin.

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-390768 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CYP3A (H-10) is recommended for detection of CYP3A4, CYP3A5, CYP3A7 and CYP3A43 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); may cross-react with other CYP3A family members.

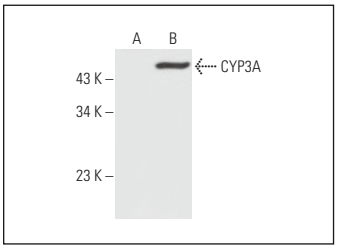
Molecular Weight of CYP3A: 52-55 kDa.

Positive Controls: human liver extract: sc-363766.

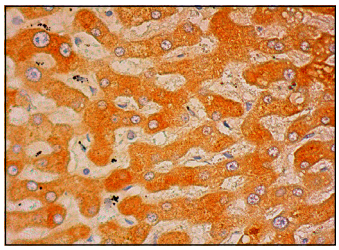
RECOMMENDED SUPPORT REAGENTS

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



CYP3A (H-10): sc-390768. Western blot analysis of CYP3A expression in mouse liver (**A**) and human liver (**B**) tissue extracts. Note lack of reactivity with mouse CYP3A in lane **A**.



CYP3A (H-10): sc-390768. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Kabe, Y., et al. 2021. Glycyrrhizin derivatives suppress cancer chemoresistance by inhibiting progesterone receptor membrane component 1. Cancers 13: 3265.

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.