SANTA CRUZ BIOTECHNOLOGY, INC.

CYP3A4 (C-17): sc-27639

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

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

REFERENCES

1. Murray, G.I., et al. 1988. The immunocytochemical localization and distribution of cytochrome P450 in normal human hepatic and extrahepatic tissues with a monoclonal antibody to human cytochrome P450. Br. J. Clin. Pharmacol. 25: 465-475.
2. Wienkers, L.C. 2001. Problems associated with *in vitro* assessment of drug inhibition of CYP3A4 and other P450 enzymes and its impact on drug discovery. J. Pharmacol. Toxicol. Methods 45: 79-84.
3. Patel, J., et al. 2001. Strategies to overcome simultaneous P-glycoprotein-mediated efflux and CYP3A4-mediated metabolism of drugs. Pharmacogenomics 2: 401-415.
4. Kapucuoglu, N., et al. 2003. Expression of CYP3A4 in human breast tumor and non-tumor tissues. Cancer Lett. 202: 17-23.
5. Williams, P.A., et al. 2004. Crystal structures of human cytochrome P450 3A4 bound to metyrapone and progesterone. Science 305: 683-686.
6. 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.

CHROMOSOMAL LOCATION

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

SOURCE

CYP3A4 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CYP3A4 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-27639 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

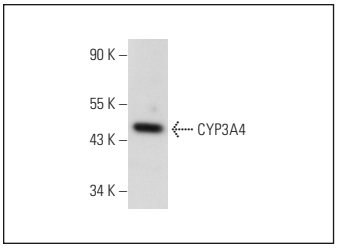
CYP3A4 (C-17) is recommended for detection of CYP3A4 and, to a lesser extent, CYP3A5 and CYP3A7 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with CYP3A7-CYP3AP1.

CYP3A4 (C-17) is also recommended for detection of CYP3A4 and, to a lesser extent, CYP3A5 and CYP3A7 in additional species, including equine and canine.

Molecular Weight of CYP3A4: 51 kDa.

Positive Controls: human liver extract: sc-363766 or PC-3 cell lysate: sc-2220.

DATA



CYP3A4 (C-17): sc-27639. Western blot analysis of CYP3A4 expression in PC-3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Breuker, C., et al. 2010. Hepatic expression of thyroid hormone-responsive spot 14 protein is regulated by constitutive androstane receptor (NR1I3). Endocrinology 151: 1653-1661.
2. González, R., et al. 2011. Cytoprotective properties of rifampicin are related to the regulation of detoxification system and bile acid transporter expression during hepatocellular injury induced by hydrophobic bile acids. J. Hepatobiliary Pancreat. Sci. 18: 740-750.
3. Lim, Y.P., et al. 2012. Sesamin: a naturally occurring lignan inhibits CYP3A4 by antagonizing the pregnane X receptor activation. Evid. Based Complement. Alternat. Med. 2012: 242810.
4. Lim, Y.P., et al. 2014. Allyl isothiocyanate (AITC) inhibits pregnane X receptor (PXR) and constitutive androstane receptor (CAR) activation and protects against acetaminophen- and amiodarone-induced cytotoxicity. Arch. Toxicol. 89: 57-72.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.