SANTA CRUZ BIOTECHNOLOGY, INC.

CYP3A4 (HL3): sc-53850

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 andCYP3A43) 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.

CHROMOSOMAL LOCATION

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

SOURCE

CYP3A4 (HL3) is a mouse monoclonal antibody raised against partially purified liver microsomes 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.

CYP3A4 (HL3) is available conjugated to agarose (sc-53850 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53850 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53850 PE), fluorescein (sc-53850 FITC), Alexa Fluor® 488 (sc-53850 AF488), Alexa Fluor® 546 (sc-53850 AF546), Alexa Fluor® 594 (sc-53850 AF594) or Alexa Fluor® 647 (sc-53850 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53850 AF680) or Alexa Fluor® 790 (sc-53850 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP3A4 (HL3) is recommended for detection of CYP3A4 of human origin and the corresponding rat homolog 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CYP3A4 siRNA (h): sc-43711, CYP3A4 shRNA Plasmid (h): sc-43711-SH and CYP3A4 shRNA (h) Lentiviral Particles: sc-43711-V.

Molecular Weight of CYP3A4: 51 kDa.

Positive Controls: human liver extract: sc-363766.

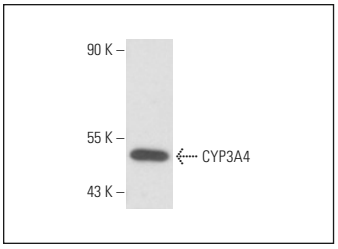
STORAGE

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

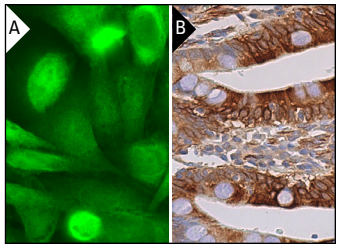
RESEARCH USE

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

DATA



CYP3A4 (HL3): sc-53850. Western blot analysis of CYP3A4 expression in human liver tissue extract.



CYP3A4 (HL3) Alexa Fluor® 488: sc-53850 AF488. Direct immunofluorescence staining of formalin-fixed SW480 cells showing cytoplasmic and membrane localization. Blocked with UltraCruz® Blocking Reagent: sc-516214 (**A**). CYP3A4 (HL3): sc-53850. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Novotna, A., et al. 2010. Investigation of Orlistat effects on PXR activation and CYP3A4 expression in primary human hepatocytes and human intestinal LS174T cells. Eur. J. Pharm. Sci. 41: 276-280.
2. Pavek, P., et al. 2012. Rifampicin does not significantly affect the expression of small heterodimer partner in primary human hepatocytes. Front. Pharmacol. 3: 1.
3. Dong, M.S., et al. 2013. Co-expression of human cytochrome b5 increases expression of cytochrome P450 3A4 in *Escherichia coli* by stabilizing mRNA. Protein Expr. Purif. 89: 44-50.
4. Smutny, T., et al. 2014. U0126, a mitogen-activated protein kinase kinase 1 and 2 (MEK1 and 2) inhibitor, selectively up-regulates main isoforms of CYP3A subfamily via a pregnane X receptor (PXR) in Hep G2 cells. Arch. Toxicol. 88: 2243-2259.
5. Zhang, X., et al. 2015. Tanshinone IIA exerts protective effects in a LCA-induced cholestatic liver model associated with participation of pregnane X receptor. J Ethnopharmacol. 164: 357-367.
6. Štepánková, M., et al. 2016. Optical isomers of dihydropyridine calcium channel blockers display enantiospecific effects on the expression and enzyme activities of human xenobiotics-metabolizing cytochromes P450. Toxicol. Lett. 262: 173-186.
7. Kim, S.W., et al. 2017. Role of 14-3-3 σ in over-expression of P-gp by rifampin and paclitaxel stimulation through interaction with PXR. Cell. Signal. 31: 124-134.
8. Deng, X., et al. 2018. Chronic liver injury induces conversion of biliary epithelial cells into hepatocytes. Cell Stem Cell 23: 114-122.e3.

PROTOCOLS

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