SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2A6 (F16 P2 D8): sc-53615

BACKGROUND

The cytochrome P450 proteins (CYPs) are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies based on their sequence similarities. CYP2A6 is a liver enzyme that metabolizes a number of drugs and a variety of procarcinogens, though it is primarily responsible for the metabolism of nicotine, the major addictive agent in tobacco. CYP2A6 inactivates nicotine to cotinine, and then cotinine to 3-hydroxycotinine. Differences in CYP2A6 genotypes are related to nicotine dependence, and may influence smoking habits and withdrawal symptoms in individuals that are quitting smoking. This suggests that an individualized smoking cessation program may be designed based on CYP2A6 genotypes.

REFERENCES

1. Nakajima, M., et al. 2004. Novel human CYP2A6 alleles confound gene deletion analysis. FEBS Lett. 569: 75-81.
2. Kimura, M., et al. 2005. CYP2A6 is a principal enzyme involved in hydroxylation of 1,7-dimethylxanthine, a main caffeine metabolite, in humans. Drug Metab. Dispos. 33: 1361-1366.
3. Kumarakulasingham, M., et al. 2005. Cytochrome P450 profile of colorectal cancer: identification of markers of prognosis. Clin. Cancer Res. 11: 3758-3765.

CHROMOSOMAL LOCATION

Genetic locus: CYP2A13/CYP2A7/CYP2A6/CYP2B6 (human) mapping to 19q13.2.

SOURCE

CYP2A6 (F16 P2 D8) is a mouse monoclonal antibody raised against synthetic ovalbumin-conjugated CYP2A6 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.

CYP2A6 (F16 P2 D8) is available conjugated to agarose (sc-53615 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53615 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53615 PE), fluorescein (sc-53615 FITC), Alexa Fluor® 488 (sc-53615 AF488), Alexa Fluor® 546 (sc-53615 AF546), Alexa Fluor® 594 (sc-53615 AF594) or Alexa Fluor® 647 (sc-53615 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53615 AF680) or Alexa Fluor® 790 (sc-53615 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

PROTOCOLS

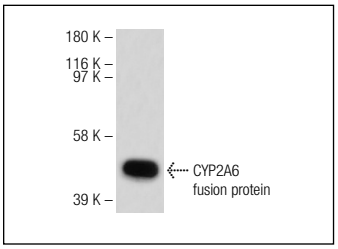
See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

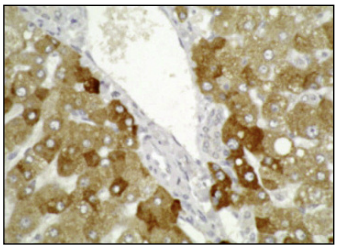
CYP2A6 (F16 P2 D8) is recommended for detection of CYP2A6, CYP2A7, CYP2A13 and CYP2B6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of CYP2A6: 57 kDa.

DATA



CYP2A6 (F16 P2 D8): sc-53615. Western blot analysis of human recombinant CYP2A6 fusion protein.



CYP2A6 (F16 P2 D8): sc-53615. Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human liver tissue showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Vrzal, R., et al. 2013. Effects of oral anorexiant sibutramine on the expression of cytochromes P450s in human hepatocytes and cancer cell lines. J. Biochem. Mol. Toxicol. 27: 515-521.
2. Vrzal, R., et al. 2015. Environmental pollutants parathion, paraquat and bisphenol A show distinct effects towards nuclear receptors-mediated induction of xenobiotics-metabolizing cytochromes P450 in human hepatocytes. Toxicol. Lett. 238: 43-53.
3. Korhonova, M., et al. 2015. Optical isomers of atorvastatin, rosuvastatin and fluvastatin enantiospecifically activate pregnane X receptor PXR and induce CYP2A6, CYP2B6 and CYP3A4 in human hepatocytes. PLoS ONE 10: e0137720.
4. Vrzal, R., et al. 2015. The effects of drugs with immunosuppressive or immunomodulatory activities on xenobiotics-metabolizing enzymes expression in primary human hepatocytes. Toxicol. In Vitro 29: 1088-1099.
5. Stepankova, 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.

RESEARCH USE

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