SANTA CRUZ BIOTECHNOLOGY, INC.

CYP1A1 (G-18): sc-9828

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

P450 enzymes constitute a family of monooxygenase enzymes that are involved in the metabolism of a wide array of endogenous and xenobiotic compounds. Several P450 enzymes have been classified by sequence similarities as members of the CYP1A and CYP2A subfamilies. NADPH cytochrome P450 reductase is a microsomal enzyme responsible for the transfer of electrons from NADPH to cytochrome P450 enzymes during the P450 catalytic cycle. NADPH cytochrome P450 reductase is localized to the endoplasmic reticulum where it is also able to transfer electrons to heme oxygenase and cytochrome β5. NADPH cytochrome P450 reductase is structurally related to two separate flavoprotein families, ferredoxin nucleotide reductase (FNR) and flavodoxin. Electron transfer of NADPH cytochrome P450 reductase requires the binding of two flavin cofactors, FAD and FMN, to the FNR and flavodoxin domains, respectively.

CHROMOSOMAL LOCATION

Genetic locus: CYP1A1/CYP1A2 (human) mapping to 15q24.1; Cyp1a1/Cyp1a2 (mouse) mapping to 9 B.

SOURCE

CYP1A1 (G-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CYP1A1 of mouse 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-9828 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP1A1 (G-18) is recommended for detection of CYP1A1 and, to a lesser extent, CYP1A2 of mouse, rat and 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), 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).

Molecular Weight of CYP1A1: 56 kDa.

Positive Controls: CYP1A1 (h): 293T Lysate: sc-114027 or HeLa whole cell lysate: sc-2200.

STORAGE

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

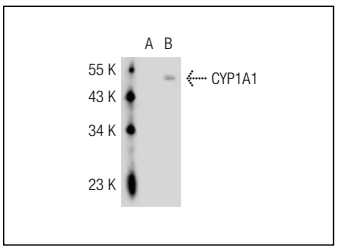
PROTOCOLS

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

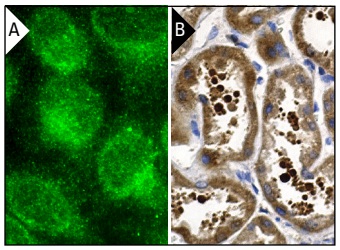
RESEARCH USE

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

DATA



CYP1A1 (G-18): sc-9828. Western blot analysis of CYP1A1 expression in non-transfected: sc-117752 (**A**) and human CYP1A1 transfected: sc-114027 (**B**) 293T whole cell lysates.



CYP1A1 (G-18): sc-9828. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Albright, C.D., et al. 2003. Mitochondrial and microsomal derived reactive oxygen species mediate apoptosis induced by transforming growth factor-β1 in immortalized rat hepatocytes. J. Cell. Biochem. 89: 254-261.
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3. Wahl, M., et al. 2010. Polybrominated diphenyl ethers and arylhydrocarbon receptor agonists: Different toxicity and target gene expression. Toxicol. Lett. 198: 119-126.
4. Mitchell, K.A., et al. 2010. The activated aryl hydrocarbon receptor synergizes mitogen-induced murine liver hyperplasia. Toxicology 276: 103-109.
5. Ptak, A., et al. 2010. Induction of cytochrome P450 1A1 in MCF-7 human breast cancer cells by 4-chlorobiphenyl (PCB3) and the effects of its hydroxylated metabolites on cellular apoptosis. Environ. Int. 36: 935-941.
6. Szaefer, H., et al. 2011. Chokeberry *(Aronia melanocarpa)* juice modulates 7,12-dimethylbenz[a]anthracene induced hepatic but not mammary gland phase I and II enzymes in female rats. Environ. Pharmacol. 31: 339-346.
7. Szaefer, H., et al. 2011. Modulation of carcinogen metabolizing cytochromes P450 in rat liver and kidney by cabbage and sauerkraut juices: comparison with the effects of indole-3-carbinol and phenethyl isothiocyanate. Phytother. Res. 26: 1148-1155.
8. Novotna, A., et al. 2011. Construction and characterization of hepatocyte nuclear factor HNF4α1 over-expressing cell line derived from human hepatoma HepG2 cells. Eur. J. Pharmacol. 669: 45-50.
9. Volkova, M., et al. 2011. Activation of the aryl hydrocarbon receptor by doxorubicin mediates cytoprotective effects in the heart. Cardiovasc. Res. 90: 305-314.
10. Vrba, J., et al. 2011. Protopine and allocryptopine increase mRNA levels of cytochromes P450 1A in human hepatocytes and HepG2 cells independently of AhR. Toxicol. Lett. 203: 135-141.