SANTA CRUZ BIOTECHNOLOGY, INC.

CYP1A1 (B-4): sc-25304

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 (human) mapping to 15q24.1; Cyp1a1 (mouse) mapping to 9 B.

SOURCE

CYP1A1 (B-4) is a mouse monoclonal antibody raised against amino acids 246-315 of CYP1A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP1A1 (B-4) is available conjugated to agarose (sc-25304 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-25304 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25304 PE), fluorescein (sc-25304 FITC), Alexa Fluor® 488 (sc-25304 AF488), Alexa Fluor® 546 (sc-25304 AF546), Alexa Fluor® 594 (sc-25304 AF594) or Alexa Fluor® 647 (sc-25304 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25304 AF680) or Alexa Fluor® 790 (sc-25304 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP1A1 (B-4) is recommended for detection of CYP1A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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).

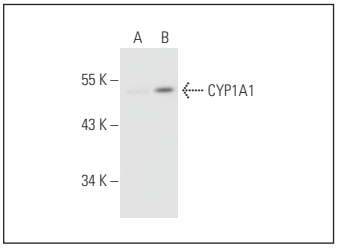
Suitable for use as control antibody for CYP1A1 siRNA (h): sc-41483, CYP1A1 siRNA (m): sc-41484, CYP1A1 siRNA (r): sc-270346, CYP1A1 shRNA Plasmid (h): sc-41483-SH, CYP1A1 shRNA Plasmid (m): sc-41484-SH, CYP1A1 shRNA Plasmid (r): sc-270346-SH, CYP1A1 shRNA (h) Lentiviral Particles: sc-41483-V, CYP1A1 shRNA (m) Lentiviral Particles: sc-41484-V and CYP1A1 shRNA (r) Lentiviral Particles: sc-270346-V.

Molecular Weight of CYP1A1: 56 kDa.

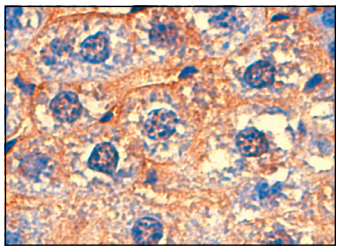
STORAGE

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

DATA



CYP1A1 (B-4): sc-25304. Western blot analysis of CYP1A1 expression in non-transfected: sc-117752 (**A**) and human CYP1A1 transfected: sc-114027 (**B**) 293T whole cell lysates.



CYP1A1 (B-4): sc-25304. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse liver tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Hirata, H., et al. 2008. CYP1A1, SULT1A1, and SULT1E1 polymorphisms are risk factors for endometrial cancer susceptibility. Cancer 112: 1964-1973.
2. Azkargorta, M., et al. 2010. Differential proteomics analysis reveals a role for E2F2 in the regulation of the Ahr pathway in T lymphocytes. Mol. Cell. Proteomics 9: 2184-2194.
3. Tsuji, G., et al. 2012. Identification of ketoconazole as an AhR-Nrf2 activator in cultured human keratinocytes: the basis of its anti-inflammatory effect. J. Invest. Dermatol. 132: 59-68.
4. Ishikawa, T., et al. 2014. Induction of Ahr-mediated gene transcription by coffee. PLoS ONE 9: e102152.
5. Buyl, K., et al. 2014. Characterization of hepatic markers in human Wharton's Jelly-derived mesenchymal stem cells. Toxicol. In Vitro 28: 113-119.
6. Yoshida, K., et al. 2014. 6-shogaol, a major compound in ginger, induces aryl hydrocarbon receptor-mediated transcriptional activity and gene expression. J. Agric. Food Chem. 62: 5492-5499.
7. Wu, Z., et al. 2014. Z-Ligustilide inhibits benzo(a)pyrene-induced CYP1A1 upregulation in cultured human keratinocytes via Ros-dependent Nrf2 activation. Exp. Dermatol. 23: 260-265.
8. Das Gupta, S., et al. 2015. Dietary γ-tocopherol-rich mixture inhibits estrogen-induced mammary tumorigenesis by modulating estrogen metabolism, antioxidant response, and PPARγ. Cancer Prev. Res. 8: 807-816.
9. Campos, S.P., et al. 2016. Expression of CYP1A1 and CYP1A2 in the liver and kidney of rabbits after prolonged infusion of propofol. Exp. Toxicol. Pathol. 68: 521-531.

RESEARCH USE

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