

CYP1A1 (B-2): sc-48432

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 $\beta 5$. 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-2) is a mouse monoclonal antibody raised against amino acids 246-315 of CYP1A1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CYP1A1 (B-2) is recommended for detection of CYP1A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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.

Positive Controls: 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.

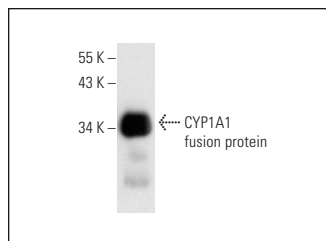
PROTOCOLS

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

RESEARCH USE

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

DATA



CYP1A1 (B-2): sc-48432. Western blot analysis of human recombinant CYP1A1 fusion protein.

SELECT PRODUCT CITATIONS

- Ghodsizadeh, A., et al. 2010. Generation of liver disease-specific induced pluripotent stem cells along with efficient differentiation to functional hepatocyte-like cells. *Stem Cell Rev.* 6: 622-632.
- Piryaei, A., et al. 2011. Differentiation of bone marrow-derived mesenchymal stem cells into hepatocyte-like cells on nanofibers and their transplantation into a carbon tetrachloride-induced liver fibrosis model. *Stem Cell Rev.* 7: 103-118.
- Kazantseva, M.G., et al. 2012. Dendritic cells provide a potential link between smoking and inflammation in rheumatoid arthritis. *Arthritis Res. Ther.* 14: R208.
- Xia, B., et al. 2014. Effect of hexavalent chromium on histone biotinylation in human bronchial epithelial cells. *Toxicol. Lett.* 228: 241-247.
- Yang, F., et al. 2016. Overexpression of catalase enhances benzo(a)pyrene detoxification in endothelial microsomes. *PLoS ONE* 11: e0162561.
- Xia, B., et al. 2016. Repression of biotin-related proteins by benzo[a]pyrene-induced epigenetic modifications in human bronchial epithelial cells. *Int. J. Toxicol.* 35: 336-343.
- Yu, J., et al. 2019. A tryptophan metabolite of the skin microbiota attenuates inflammation in patients with atopic dermatitis through the aryl hydrocarbon receptor. *J. Allergy Clin. Immunol.* 143: 2108-2119.e12.
- Ren, Y., et al. 2021. Alternol sensitizes renal carcinoma cells to TRAIL-induced apoptosis. *Front. Pharmacol.* 12: 560903.
- Kumar, A., et al. 2022. Effect of benzo(a)pyrene on oxidative stress and inflammatory mediators in astrocytes and HIV-infected macrophages. *PLoS ONE* 17: e0275874.



See **CYP1A1 (A-9): sc-393979** for CYP1A1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.