

# CYP1A2 (D15): sc-53241

## BACKGROUND

CYP1A2, also called cytochrome P450 1A2, is a heme-thiolate monooxygenase enzyme involved in the NADPH-dependent electron transport pathway of liver microsomes. A member of the cytochrome P450 family, CYP1A2 oxidizes fatty acids, steroids and xenobiotics. It is also involved in the metabolism of imiprimine, propranol and clozapine. CYP1A2 localizes to the membrane of the endoplasmic reticulum. It is induced by 3-methylcholanthrene, Insulin, modafinil and hyperforin and inhibited by many fluoroquinolone antibiotics, caffeine, fluvoxamine and cimetidine. In addition, the involvement of CYP1A2 in the metabolism of estrogen is associated with a reduced risk of breast cancer.

## CHROMOSOMAL LOCATION

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

## SOURCE

CYP1A2 (D15) is a mouse monoclonal antibody raised against liver cytochrome P450 1A2 of rat origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP1A2 (D15) is available conjugated to agarose (sc-53241 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53241 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53241 PE), fluorescein (sc-53241 FITC), Alexa Fluor® 488 (sc-53241 AF488), Alexa Fluor® 546 (sc-53241 AF546), Alexa Fluor® 594 (sc-53241 AF594) or Alexa Fluor® 647 (sc-53241 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53241 AF680) or Alexa Fluor® 790 (sc-53241 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CYP1A2 (D15) is recommended for detection of CYP1A2 and, to a lesser extent, CYP1A1 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); not recommended for detection of rat CYP 2A1, 2B1, 2B2, 2C6, 2C7, 2C11, 4A1, 4A2 and 4A3.

Molecular Weight of CYP1A2: 54 kDa.

Positive Controls: mouse liver extract: sc-2256, human liver extract: sc-363766 or rat liver extract: sc-2395.

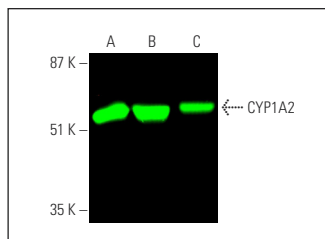
## STORAGE

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

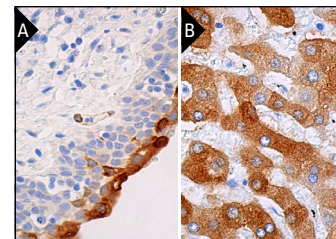
## RESEARCH USE

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

## DATA



CYP1A2 (D15): sc-53241. Near-infrared western blot analysis of CYP1A2 expression in mouse liver (A), rat liver (B) and human liver (C) tissue extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



CYP1A2 (D15): sc-53241. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing cytoplasmic staining of outer layer of urothelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

## SELECT PRODUCT CITATIONS

- Roos, R., et al. 2011. Hepatic effects of a highly purified 2,2',3,4,4',5,5'-heptachlorbiphenyl (PCB 180) in male and female rats. *Toxicology* 284: 42-53.
- Fagerberg, L., et al. 2014. Analysis of the human tissue-specific expression by genome-wide integration of transcriptomics and antibody-based proteomics. *Mol. Cell. Proteomics* 13: 397-406.
- Rasmussen, M.K., et al. 2016. Skatole (3-methylindole) is a partial aryl hydrocarbon receptor agonist and induces CYP1A1/2 and CYP1B1 expression in primary human hepatocytes. *PLoS ONE* 11: e0154629.
- Chowdhary, V., et al. 2017. miRNA-122 protects mice and human hepatocytes from acetaminophen toxicity by regulating cytochrome P450 family 1 subfamily A member 2 and family 2 subfamily E member 1 expression. *Am. J. Pathol.* 187: 2758-2774.
- Isobe, Y., et al. 2018. Comprehensive analysis of the mouse cytochrome P450 family responsible for ω-3 epoxidation of eicosapentaenoic acid. *Sci. Rep.* 8: 7954.
- Katsuda, T., et al. 2019. Generation of human hepatic progenitor cells with regenerative and metabolic capacities from primary hepatocytes. *Elife* 8: e47313.
- Katsuda, T., et al. 2020. Long-term maintenance of functional primary human hepatocytes using small molecules. *FEBS Lett.* 594: 114-125.
- Yu, J., et al. 2021. CYP1A2 suppresses hepatocellular carcinoma through antagonizing HGF/MET signaling. *Theranostics* 11: 2123-2136.
- McGuire, M.R., et al. 2021. Progesterone receptor membrane component 1 (PGRMC1) binds and stabilizes cytochromes P450 through a heme-independent mechanism. *J. Biol. Chem.* 297: 101316.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.