

## CYP3A1 (P6): sc-53246



The Power to Question

## BACKGROUND

CYP3A proteins are P450 monooxygenases and in animals, P450 enzymes serve two major functions: biosynthesis of steroids, fatty acids and bile acids, and the metabolism of endogenous and exogenous substrates. A wide variety of exogenous substrates are metabolized by P450 enzymes, including toxins and drugs. The four major families involved in drug metabolism are CYP1, 2, 3 and 4. Cyp3a1, also designated Cyp3a23/3a1 is specifically expressed in rat. There are corresponding homologs described in human and mouse, including CYP3A5 and Cyp3a11, respectively. In humans, CYP3A4 undergoes alternative splicing encoding different isoforms, including one previously designated CYP3A3. CYP3A4 localizes to the endoplasmic reticulum in liver and small intestine, and its expression is induced by glucocorticoids and some pharmacological agents.

## CHROMOSOMAL LOCATION

Genetic locus: CYP3A4 (human) mapping to 7q22.1; Cyp3a11 (mouse) mapping to 5 G2.

## SOURCE

CYP3A1 (P6) is a mouse monoclonal antibody raised against liver Cyp3a1 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.

CYP3A1 (P6) is available conjugated to agarose (sc-53246 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53246 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53246 PE), fluorescein (sc-53246 FITC), Alexa Fluor® 488 (sc-53246 AF488), Alexa Fluor® 546 (sc-53246 AF546), Alexa Fluor® 594 (sc-53246 AF594) or Alexa Fluor® 647 (sc-53246 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53246 AF680) or Alexa Fluor® 790 (sc-53246 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CYP3A1 (P6) is recommended for detection of CYP3A4 of human origin, Cyp3a1 of rat origin, and potentially Cyp3a11 of mouse origin (based on inducibility) by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; may cross react with other CYP3A gene family members of mouse, rat and human origin.

Suitable for use as control antibody for CYP3A4 siRNA (h): sc-43711, Cyp3a11 siRNA (m): sc-155878, CYP3A4 shRNA Plasmid (h): sc-43711-SH, Cyp3a11 shRNA Plasmid (m): sc-155878-SH, CYP3A4 shRNA (h) Lentiviral Particles: sc-43711-V and Cyp3a11 shRNA (m) Lentiviral Particles: sc-155878-V.

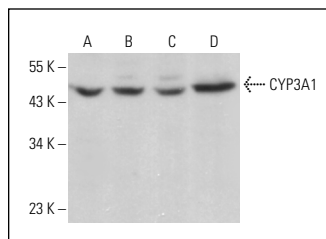
Molecular Weight of CYP3A1: 51 kDa.

Positive Controls: rat liver extract: sc-2395, Ca Ski whole cell lysate: sc-364360 or COLO 205 whole cell lysate: sc-364177.

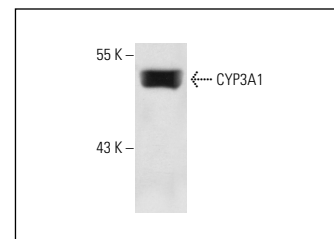
## STORAGE

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

## DATA



CYP3A1 (P6): sc-53246. Western blot analysis of CYP3A1 expression in HT-1080 (A), COLO 205 (B), Hep G2 (C) and Ca Ski (D) whole cell lysates.



CYP3A1 (P6): sc-53246. Western blot analysis of CYP3A1 expression in rat liver tissue extract.

## SELECT PRODUCT CITATIONS

- Roos, R., et al. 2011. Hepatic effects of a highly purified 2,2',3,4,4',5,5'-heptachlorobiphenyl (PCB 180) in male and female rats. *Toxicology* 284: 42-53.
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- Clarke, J.D., et al. 2014. Experimental nonalcoholic steatohepatitis increases exposure to simvastatin hydroxy acid by decreasing hepatic organic anion transporting polypeptide expression. *J. Pharmacol. Exp. Ther.* 348: 452-458.
- Vichi, S., et al. 2015. Cell type-specific expression and localization of cytochrome P450 isoforms in tridimensional aggregating rat brain cell cultures. *Toxicol. In Vitro* 30: 176-184.
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- Santoh, M., et al. 2017. Acetaminophen analog N-acetyl-m-aminophenol, but not its reactive metabolite, N-acetyl-p-benzoquinone imine induces CYP3A activity via inhibition of protein degradation. *Biochem. Biophys. Res. Commun.* 486: 639-644.
- Dovrtelova, G., et al. 2018. Effect of endocannabinoid oleamide on rat and human liver cytochrome P450 enzymes in *in vitro* and *in vivo* models. *Drug Metab. Dispos.* 46: 913-923.
- Yang, T., et al. 2018. Quercetin-3-O-β-D-glucoside decreases the bioavailability of cyclosporin A through regulation of drug metabolizing enzymes, transporters and nuclear receptors in rats. *Mol. Med. Rep.* 18: 2599-2612.
- Zhao, Y.Y., et al. 2021. Schisandrol B promotes liver enlargement via activation of PXR and YAP pathways in mice. *Phytomedicine* 84: 153520.

## RESEARCH USE

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