SANTA CRUZ BIOTECHNOLOGY, INC.

CYP1A2 (D-3): sc-393783

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCES

1. Botelho, L.H., et al. 1982. Amino-terminal and carboxy-terminal sequence of hepatic microsomal cytochrome P-450d, a unique hemoprotein from rats treated with isosafrole. Biochemistry 21: 1152-1155.
2. Yabusaki, Y., et al. 1984. Characterization of complementary DNA clones coding for two forms of 3-methylcholanthrene-inducible rat liver cytochrome P-450. J. Biochem. 96: 793-804.
3. Sogawa, K., et al. 1985. Complete nucleotide sequence of a methylcholanthrene-inducible cytochrome P-450 (P-450d) gene in the rat. J. Biol. Chem. 260: 5026-5032.

CHROMOSOMAL LOCATION

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

SOURCE

CYP1A2 (D-3) is a mouse monoclonal antibody raised against amino acids 246-315 mapping within an internal region of CYP1A2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CYP1A2 (D-3) is recommended for detection of CYP1A2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for CYP1A2 siRNA (h): sc-41485, CYP1A2 siRNA (m): sc-41486, CYP1A2 shRNA Plasmid (h): sc-41485-SH, CYP1A2 shRNA Plasmid (m): sc-41486-SH, CYP1A2 shRNA (h) Lentiviral Particles: sc-41485-V and CYP1A2 shRNA (m) Lentiviral Particles: sc-41486-V.

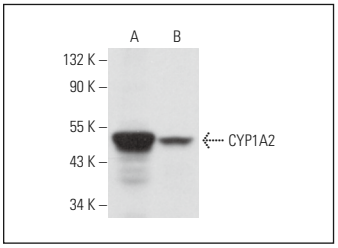
Molecular Weight of CYP1A2: 54 kDa.

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

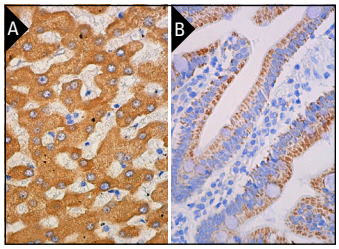
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CYP1A2 (D-3): sc-393783. Western blot analysis of CYP1A2 expression in human liver (**A**) and rat liver (**B**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



CYP1A2 (D-3): sc-393783. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Weiss, J., et al. 2016. Venetoclax (ABT-199) might act as a perpetrator in pharmacokinetic drug-drug interactions. Pharmaceutics 8: 5.
2. Chen, Y., et al. 2017. The expression, induction and pharmacological activity of CYP1A2 are post-transcriptionally regulated by microRNA hsa-miR-132-5p. Biochem. Pharmacol. 145: 178-191.
3. Theile, D., et al. 2017. Clementine juice has the potential for drug interactions-*in vitro* comparison with grapefruit and mandarin juice. Eur. J. Pharm. Sci. 97: 247-256.
4. Zinflou, C. and Rochette, P.J. 2023. Indenopyrene and blue-light co-exposure impairs the tightly controlled activation of xenobiotic metabolism in retinal pigment epithelial cells: a mechanism for synergistic toxicity. Int. J. Mol. Sci. 24: 17385.

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.