SANTA CRUZ BIOTECHNOLOGY, INC.

CYP1A1 (A-9): sc-393979

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 b5. 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.

REFERENCES

1. Vermilion, J.L. and Coon, M.J. 1978. Purified liver microsomal NADPH-cytochrome P-450 reductase. Spectral characterization of oxidation-reduction states. J. Biol. Chem. 253: 2694-2704.
2. Shen, A.L., et al. 1989. Structural analysis of the FMN binding domain of NADPH-cytochrome P-450 oxidoreductase by site-directed mutagenesis. J. Biol. Chem. 264: 7584-7589.

CHROMOSOMAL LOCATION

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

SOURCE

CYP1A1 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 479-506 near the C-terminus of CYP1A1 of mouse 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.

CYP1A1 (A-9) is available conjugated to agarose (sc-393979 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393979 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393979 PE), fluorescein (sc-393979 FITC), Alexa Fluor® 488 (sc-393979 AF488), Alexa Fluor® 546 (sc-393979 AF546), Alexa Fluor® 594 (sc-393979 AF594) or Alexa Fluor® 647 (sc-393979 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393979 AF680) or Alexa Fluor® 790 (sc-393979 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393979 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

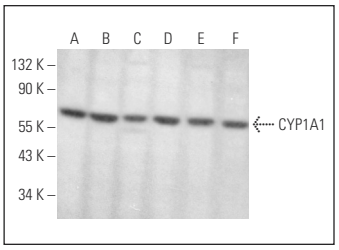
CYP1A1 (A-9) is recommended for detection of CYP1A1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) 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.

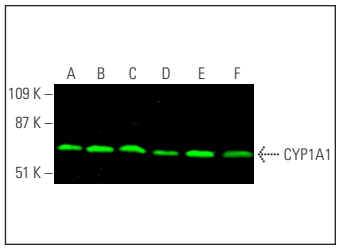
Molecular Weight of CYP1A1: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or EOC 20 whole cell lysate: sc-364187.

DATA



CYP1A1 (A-9): sc-393979. Western blot analysis of CYP1A1 expression in HeLa (**A**), Hep G2 (**B**), MCF7 (**C**), MDA-MB-231 (**D**), SK-BR-3 (**E**) and EOC 20 (**F**) whole cell lysates.



CYP1A1 (A-9): sc-393979. Near-infrared western blot analysis of CYP1A1 expression in HeLa (**A**), Neuro-2A (**B**), MCF7 (**C**), Hep G2 (**D**), SK-BR-3 (**E**) and EOC 20 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Alexander, C.R., et al. 2017. Reprint of: CYP1A protein expression and catalytic activity in double-crested cormorants experimentally exposed to Deepwater Horizon Mississippi Canyon 252 oil. Ecotoxicol. Environ. Saf. 146: 68-75.
2. Memari, B., et al. 2019. Endocrine aryl hydrocarbon receptor signaling is induced by moderate cutaneous exposure to ultraviolet light. Sci. Rep. 9: 8486.
3. Tarnow, P., et al. 2020. Characterization of quinoline yellow dyes as transient aryl hydrocarbon receptor agonists. Chem. Res. Toxicol. 33: 742-750.
4. Song, W., et al. 2021. Sinomenine ameliorates septic acute lung injury in mice by modulating gut homeostasis via aryl hydrocarbon receptor/Nrf2 pathway. Eur. J. Pharmacol. 912: 174581.

RESEARCH USE

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