

CYP2A (H-110): sc-33214

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.

REFERENCES

1. Vermilion, J.L. and Coon, M.J. 1978. Purified liver microsomal NADPH-cytochrome P450 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 P450 oxidoreductase by site-directed mutagenesis. *J. Biol. Chem.* 264: 7584-7589.
3. Haniu, M., et al. 1989. Structural and functional analysis of NADPH-cytochrome P450 reductase from human liver: complete sequence of human enzyme and NADPH-binding sites. *Biochemistry* 28: 8639-8645.

SOURCE

CYP2A (H-110) is a rabbit polyclonal antibody raised against amino acids 151-260 mapping within an internal region of CYP2A13 of human origin.

PRODUCT

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

APPLICATIONS

CYP2A (H-110) is recommended for detection of a broad range of CYP2A family members 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), 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).

CYP2A (H-110) is also recommended for detection of a broad range of CYP2A family members in additional species, including equine, canine, bovine and porcine.

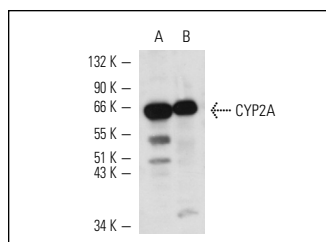
Molecular Weight of CYP2A: 57 kDa.

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

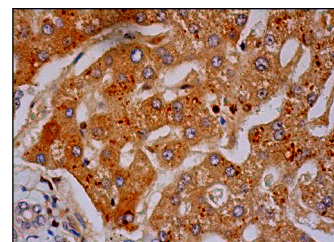
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz[™]: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



CYP2A (H-110): sc-33214. Western blot analysis of CYP2A expression in human liver (A) and mouse liver (B) tissue extracts.



CYP2A (H-110): sc-33214. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes and bile duct cells.

SELECT PRODUCT CITATIONS

1. Roedel, E.Q., et al. 2012. Pulmonary toxicity after exposure to military-relevant heavy metal tungsten alloy particles. *Toxicol. Appl. Pharmacol.* 259: 74-86.

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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **CYP2A6 (F16 P2 D8): sc-53615**, our highly recommended monoclonal alternative to CYP2A (H-110).