

CYPOR (h): 293T Lysate: sc-113650

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. CYPOR, also known as cytochrome P450 reductase and 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. CYPOR is localized to the endoplasmic reticulum where it is also able to transfer electrons to heme oxygenase and cytochrome β_5 . CYPOR is structurally related to two separate flavoprotein families, ferredoxin nucleotide reductase (FNR) and flavodoxin. Electron transfer of CYPOR 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. Haniu, M., McManus, M.E., Birkett, D.J., Lee, T.D. and Shively, J.E. 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.
3. Shen, A.L., Porter, T.D., Wilson, T.E. and Kasper, C.B. 1989. Structural analysis of the FMN binding domain of NADPH cytochrome P450 oxidoreductase by site-directed mutagenesis. *J. Biol. Chem.* 264: 7584-7589.
4. Ohgiya, S., Shinriki, N., Kamataki, T. and Ishizaki, K. 1994. Mouse NADPH cytochrome P450 oxidoreductase: molecular cloning and functional expression in yeast. *Biochem. Biophys. Acta* 1186: 137-141.
5. Sevrioukova, I.F. and Peterson, J.A. 1995. NADPH P450 reductase: structural and functional comparisons of the eukaryotic and prokaryotic isoforms. *Biochimie* 77: 562-572.
6. Nelson, D.R., Koymans, L., Kamataki, T., Stegeman, J.J., Feyereisen, R., Waxman, D.J., Waterman, M.R., Gotoh, O., Coon, M.J., Estabrook, R.W., Cunsalus, I.C. and Nebert, D.W. 1996. P450 superfamily: update on new sequences, gene mapping, accession numbers and nomenclature. *Pharmacogenetics* 6: 1-42.
7. Hodgson, A.V. and Strobel, H.W. 1996. Quantitation of FAD-dependent cytochrome P450 reductase activity by photoreduction. *Anal. Biochem.* 243: 154-157.
8. Peterson, J.A., Sevrioukova, I., Truan, G. and Graham-Lorence, S.E. 1997. P450BM-3; a tale of two domains—or is it three? *Steroids* 62: 117-123.

CHROMOSOMAL LOCATION

Genetic locus: POR (human) mapping to 7q11.23.

PRODUCT

CYPOR (h): 293T Lysate represents a lysate of human CYPOR transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

CYPOR (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CYPOR antibodies. Recommended use: 10-20 μ l per lane.

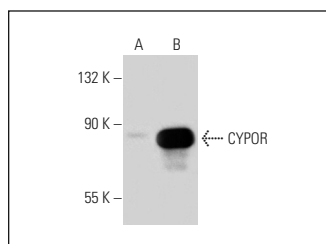
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

CYPOR (F-2): sc-55477 is recommended as a positive control antibody for Western Blot analysis of enhanced human CYPOR expression in CYPOR transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

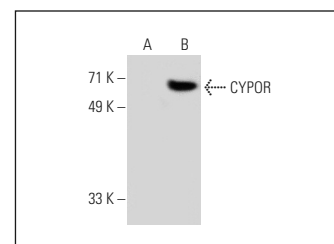
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



CYPOR (F-2): sc-55477. Western blot analysis of CYPOR expression in non-transfected: sc-117752 (A) and human CYPOR transfected: sc-113650 (B) 293T whole cell lysates.



CYPOR (G-5): sc-25263. Western blot analysis of CYPOR expression in non-transfected: sc-117752 (A) and human CYPOR transfected: sc-113650 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.