

CYP46 (V-17): sc-74391

BACKGROUND

Cytochrome P450 proteins are heme-thiolate monooxygenases that mediate NADPH-dependent electron transport and function to oxidize a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. Specifically, Cytochrome P450s are responsible for metabolizing arachidonic acid to hydroxyeicosatetraenoic acid (a regulator of blood pressure) and epoxyeicosatrienoic acid (a molecule involved in signaling events). CYP46, also known as CYP46A1 (cytochrome P450, family 46, subfamily A, polypeptide 1) or CP46, is a 500 amino acid protein that localizes to the endoplasmic reticulum and shares 95% sequence identity with its mouse counterpart. Expressed predominately in brain tissue, CYP46 catalyzes the conversion of cholesterol into 24S-hydroxycholesterol and, to a lesser extent, 25-hydroxycholesterol, thereby playing an important role in cholesterol homeostasis and turnover. Variations in the gene encoding CYP46 that influence brain cholesterol metabolism are associated with an increased risk for Alzheimer's disease (AD).

REFERENCES

1. Björkhem, I., Lütjohann, D., Diczfalusy, U., Ståhle, L., Ahlborg, G. and Wahren, J. 1998. Cholesterol homeostasis in human brain: turnover of 24S-hydroxycholesterol and evidence for a cerebral origin of most of this oxysterol in the circulation. *J. Lipid Res.* 39: 1594-1600.
2. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 604087. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Papassotiropoulos, A., Wollmer, M.A., Tsolaki, M., Brunner, F., Molyva, D., Lütjohann, D., Nitsch, R.M. and Hock, C. 2005. A cluster of cholesterol-related genes confers susceptibility for Alzheimer's disease. *J. Clin. Psychiatry* 66: 940-947.
4. Golanska, E., Hulas-Bigoszewska, K., Wojcik, I., Rieske, P., Styczynska, M., Peplonska, B., Pfeffer, A., Luczywek, E., Wasiak, B., Gabryelewicz, T., Religa, D., Chodakowska-Zebrowska, M., Barcikowska, M., Sobow, T., et al. 2005. CYP46: a risk factor for Alzheimer's disease or a coincidence? *Neurosci. Lett.* 383: 105-108.

CHROMOSOMAL LOCATION

Genetic locus: CYP46A1 (human) mapping to 14q32.2; Cyp46a1 (mouse) mapping to 12 F1.

SOURCE

CYP46 (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CYP46 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-74391 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP46 (V-17) is recommended for detection of CYP46 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

CYP46 (V-17) is also recommended for detection of CYP46 in additional species, including equine, canine, bovine and porcine.

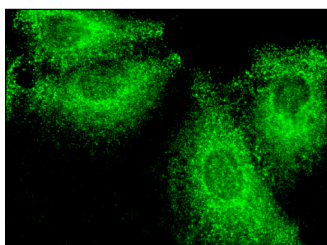
Suitable for use as control antibody for CYP46 siRNA (h): sc-77075, CYP46 siRNA (m): sc-77076, CYP46 shRNA Plasmid (h): sc-77075-SH, CYP46 shRNA Plasmid (m): sc-77076-SH, CYP46 shRNA (h) Lentiviral Particles: sc-77075-V and CYP46 shRNA (m) Lentiviral Particles: sc-77076-V.

Molecular Weight of CYP46: 62 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CYP46 (V-17): sc-74391. Immunofluorescence staining of formalin-fixed HepG2 cells showing cytoplasmic localization.

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.



Try **CYP46 (1F11): sc-136148**, our highly recommended monoclonal alternative to CYP46 (V-17).