

# CYP4Z1 (K-15): sc-104185

## 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). CYP4Z1 (cytochrome P450, family 4, subfamily Z, polypeptide 1), also known as CYP4A20, is a 505 amino acid single-pass type II membrane protein that localizes to both the microsomes and the endoplasmic reticulum and belongs to the cytochrome P450 family. Using heme groups as cofactors, CYP4Z1 functions to catalyze the conversion of a reduced flavoprotein to an oxidized flavoprotein and is involved in drug metabolism, as well as in the synthesis of cholesterol, steroids and other lipids. CYP4Z1 is expressed at high levels in breast cancer tissue, suggesting a role in tumorigenesis.

## REFERENCES

1. Simpson, A.E. 1997. The cytochrome P450 4 (CYP4) family. *Gen. Pharmacol.* 28: 351-359.
2. Rieger, M.A., et al. 2004. Identification of a novel mammary-restricted cytochrome P450, CYP4Z1, with overexpression in breast carcinoma. *Cancer Res.* 64: 2357-2364.
3. Nelson, D.R., et al. 2004. Comparison of cytochrome P450 (CYP) genes from the mouse and human genomes, including nomenclature recommendations for genes, pseudogenes and alternative-splice variants. *Pharmacogenetics* 14: 1-18.
4. Savas, U., et al. 2005. Conditional regulation of the human CYP4X1 and CYP4Z1 genes. *Arch. Biochem. Biophys.* 436: 377-385.
5. Thomas, R.D., et al. 2006. Cytochrome P450 expression and metabolic activation of cooked food mutagen 2-amino-1-methyl-6-phenylimidazo [4,5-b]pyridine (PhIP) in MCF10A breast epithelial cells. *Chem. Biol. Interact.* 160: 204-216.
6. Zöllner, A., et al. 2009. Human CYP4Z1 catalyzes the in-chain hydroxylation of lauric acid and myristic acid. *Biol. Chem.* 390: 313-317.
7. Bankovic, J., et al. 2009. Identification of genes associated with non-small-cell lung cancer promotion and progression. *Lung Cancer* 67: 151-159.

## CHROMOSOMAL LOCATION

Genetic locus: CYP4Z1 (human) mapping to 1p33.

## SOURCE

CYP4Z1 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CYP4Z1 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-104185 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CYP4Z1 (K-15) is recommended for detection of CYP4Z1 of human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other CYP4 family members.

Suitable for use as control antibody for CYP4Z1 siRNA (h): sc-88518, CYP4Z1 shRNA Plasmid (h): sc-88518-SH and CYP4Z1 shRNA (h) Lentiviral Particles: sc-88518-V.

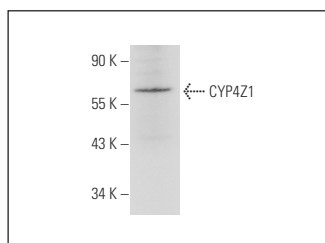
Molecular Weight of CYP4Z1: 59 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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



CYP4Z1 (K-15): sc-104185. Western blot analysis of CYP4Z1 expression in K-562 whole cell lysate.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.