

PIPOX (I-17): sc-82706

BACKGROUND

PIPOX (pipecolic acid oxidase), also known as LPIPOX or PSO, is a 390 amino acid protein that localizes to the peroxisome and belongs to the MSOX/MTOX family. Existing as a monomer, PIPOX uses FAD as a cofactor to catalyze the metabolism and subsequent degradation of sarcosine, L-pipecolic acid and L-proline. The gene encoding PIPOX maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Reuber, B.E., Karl, C., Reimann, S.A., Mihalik, S.J. and Dodt, G. 1997. Cloning and functional expression of a mammalian gene for a peroxisomal sarcosine oxidase. *J. Biol. Chem.* 272: 6766-6776.
2. IJlst, L., de Kromme, I., Oostheim, W. and Wanders, R.J. 2000. Molecular cloning and expression of human L-pipecolate oxidase. *Biochem. Biophys. Res. Commun.* 270: 1101-1105.
3. Dodt, G., Kim, D.G., Reimann, S.A., Reuber, B.E., McCabe, K., Gould, S.J. and Mihalik, S.J. 2000. L-Pipecolic acid oxidase, a human enzyme essential for the degradation of L-pipecolic acid, is most similar to the monomeric sarcosine oxidases. *Biochem. J.* 345: 487-494.
4. Dodt, G., Kim, D., Reimann, S., McCabe, K., Gould, S.J. and Mihalik, S.J. 2000. The human L-pipecolic acid oxidase is similar to bacterial monomeric sarcosine oxidases rather than D-amino acid oxidases. *Cell Biochem. Biophys.* 32: 313-316.
5. Chikayama, M., Ohsumi, M. and Yokota, S. 2000. Enzyme cytochemical localization of sarcosine oxidase activity in the liver and kidney of several mammals. *Histochem. Cell Biol.* 113: 489-495.
6. Nusbaum, R., Vogel, K.J. and Ready, K. 2006. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. *Breast Dis.* 27: 21-50.

CHROMOSOMAL LOCATION

Genetic locus: PIPOX (human) mapping to 17q11.2; Pipox (mouse) mapping to 11 B5.

SOURCE

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

STORAGE

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

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-82706 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PIPOX (I-17) is recommended for detection of PIPOX 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).

PIPOX (I-17) is also recommended for detection of PIPOX in additional species, including canine and bovine.

Suitable for use as control antibody for PIPOX siRNA (h): sc-76144, PIPOX siRNA (m): sc-76145, PIPOX shRNA Plasmid (h): sc-76144-SH, PIPOX shRNA Plasmid (m): sc-76145-SH, PIPOX shRNA (h) Lentiviral Particles: sc-76144-V and PIPOX shRNA (m) Lentiviral Particles: sc-76145-V.

Molecular Weight of PIPOX: 44 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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.

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.