SANTA CRUZ BIOTECHNOLOGY, INC.

FMO3 (D-9): sc-514882

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Flavin containing monooxygenase family consists of five gene products, FMO1-5, that are major enzymatic oxidants involved in the metabolism of various therapeutics. Located in the liver, FMO3 is a hepatic microsomal enzyme that oxygenates soft nucleophiles such as secondary and tertiary amines. Through its N-oxygenase capabilities, FMO3 acts on a variety of xenobiotics to catalyze oxidative digestion. Defects in the FMO3 gene are the primary cause of trimethylaminuria (TMAuria), an inborn error of metabolism associated with a fishy body odor emitting from sweat, urine and breath. Genetic mutations in FMO3 lead to the N-oxidation of amino-trimethylamine derived from food products, thus producing the malodor associated with TMAuria.

REFERENCES

1. Burnett, V.L., et al. 1994. Cloning and sequencing of flavin-containing monooxygenases FMO3 and FMO4 from rabbit and characterization of FMO3. J. Biol. Chem. 269: 14314-14322.
2. Krause, R.J., et al. 1996. Characterization of the methionine S-oxidase activity of rat liver and kidney microsomes: immunochemical and kinetic evidence for FMO3 being the major catalyst. Arch. Biochem. Biophys. 333: 109-116.
3. Falls, J.G., et al. 1997. Molecular cloning, sequencing, and expression in *Escherichia coli* of mouse flavin-containing monooxygenase 3 (FMO3): comparison with the human isoform. Arch. Biochem. Biophys. 347: 9-18.
4. Petalcorin, M.I., et al. 2005. The fmo genes of *Caenorhabditis elegans* and *C. briggsae:* characterisation, gene expression and comparative genomic analysis. Gene 346: 83-96.
5. Koukouritaki, S.B., et al. 2005. Discovery of novel flavin-containing monooxygenase 3 (FMO3) single nucleotide polymorphisms and functional analysis of upstream haplotype variants. Mol. Pharmacol. 68: 383-392.
6. Honkatukia, M., et al. 2005. Fishy taint in chicken eggs is associated with a substitution within a conserved motif of the FMO3 gene. Genomics 86: 225-232.
7. Krueger, S.K., et al. 2005. Mammalian flavin-containing monooxygenases: structure/function, genetic polymorphisms and role in drug metabolism. Pharmacol. Ther. 106: 357-387.
8. Hisamuddin, I.M., et al. 2005. Genetic polymorphisms of flavin monooxygenase 3 in sulindac-induced regression of colorectal adenomas in familial adenomatous polyposis. Cancer Epidemiol. Biomarkers Prev. 14: 2366-2369.

CHROMOSOMAL LOCATION

Genetic locus: FMO3 (human) mapping to 1q24.3.

SOURCE

FMO3 (D-9) is a mouse monoclonal antibody raised against amino acids 388-427 mapping within an internal region of FMO3 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

FMO3 (D-9) is recommended for detection of FMO3 of human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for FMO3 siRNA (h): sc-72256, FMO3 shRNA Plasmid (h): sc-72256-SH and FMO3 shRNA (h) Lentiviral Particles: sc-72256-V.

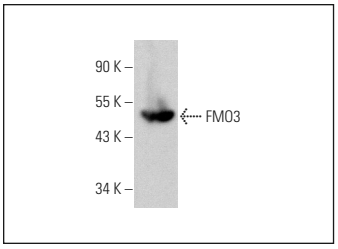
Molecular Weight of FMO3: 58 kDa.

Positive Controls: human liver extract: sc-363766.

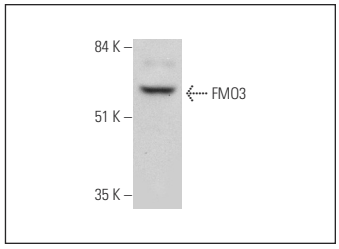
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



FMO3 (D-9): sc-514882. Western blot analysis of FMO3 expression in human liver tissue extract.



FMO3 (D-9): sc-514882. Western blot analysis of FMO3 expression in human liver tissue extract.

STORAGE

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

PROTOCOLS

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