

FMO1 (H-10): sc-376924

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. FMO1, also known as dimethylaniline oxidase 1 or dimethylaniline monooxygenase (N-oxide-forming) 1, is a 532 amino acid protein localized to the microsome and endoplasmic reticulum membranes. In human fetuses, the FMO1 gene is expressed in the liver, but shortly after birth, expression is switched off. However, the gene continues to be expressed in adult kidney and, to a lesser extent, in intestine. In all other mammals, the FMO1 gene continues to be expressed in liver after birth. Functionally, FMO1 is involved in the oxidative metabolism of a variety of xenobiotics, such as drugs and pesticides, primarily by catalyzing the N-oxygenation of secondary and tertiary amines. The gene encoding FMO1 is located on chromosome 1q24.3.

REFERENCES

- Luo, Z. and Hines, R.N. 1996. Identification of multiple rabbit flavin-containing monooxygenase form 1 (FMO1) gene promoters and observation of tissue-specific DNase I hypersensitive sites. *Arch. Biochem. Biophys.* 336: 251-260.
- Cereda, C., et al. 2006. Increased incidence of FMO1 gene single nucleotide polymorphisms in sporadic amyotrophic lateral sclerosis. *Amyotroph. Lateral Scler.* 7: 227-234.
- Glenn, K.L., et al. 2007. Analysis of FMO genes and off flavour in pork. *J. Anim. Breed. Genet.* 124: 35-38.

CHROMOSOMAL LOCATION

Genetic locus: FMO1 (human) mapping to 1q24.3; Fmo1 (mouse) mapping to 1 H2.1.

SOURCE

FMO1 (H-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 275-305 within an internal region of FMO1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

FMO1 (H-10) is available conjugated to agarose (sc-376924 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376924 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376924 PE), fluorescein (sc-376924 FITC), Alexa Fluor® 488 (sc-376924 AF488), Alexa Fluor® 546 (sc-376924 AF546), Alexa Fluor® 594 (sc-376924 AF594) or Alexa Fluor® 647 (sc-376924 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376924 AF680) or Alexa Fluor® 790 (sc-376924 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376924 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

FMO1 (H-10) is recommended for detection of FMO1 of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

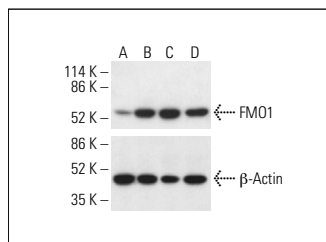
FMO1 (H-10) is also recommended for detection of FMO1 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for FMO1 siRNA (h): sc-75041, FMO1 siRNA (m): sc-75042, FMO1 shRNA Plasmid (h): sc-75041-SH, FMO1 shRNA Plasmid (m): sc-75042-SH, FMO1 shRNA (h) Lentiviral Particles: sc-75041-V and FMO1 shRNA (m) Lentiviral Particles: sc-75042-V.

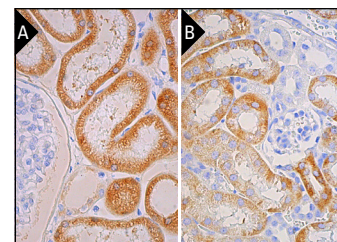
Molecular Weight of FMO1: 60 kDa.

Positive Controls: chemically-treated SP2/0 cell lysate.

DATA



FMO1 (H-10): sc-376924. Western blot analysis of FMO1 expression in untreated (A) and chemically-treated (B, C, D) SP2/0 cell lysates. Detection reagent used: m-IgG₁ BP-HRP: sc-525408. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



FMO1 (H-10): sc-376924. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney (A) and mouse kidney (B) tissue showing cytoplasmic staining of cells in tubules. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgG₁ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

- Johnson, C., et al. 2018. Decreased kidney function is associated with enhanced hepatic flavin monooxygenase activity and increased circulating trimethylamine N-oxide concentrations in mice. *Drug Metab. Dispos.* 46: 1304-1309.
- Shi, C., et al. 2022. Changes of flavin-containing monooxygenases and trimethylamine-N-oxide may be involved in the promotion of non-alcoholic fatty liver disease by intestinal microbiota metabolite trimethylamine. *Biochem. Biophys. Res. Commun.* 594: 1-7.

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.

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