

Fatty Acid 2-hydrolase (FA2H). Rabbit Polyclonal Antibody , Human

Fatty acid 2-hydroxylase, FA2H

BACKGROUND

2-Hydroxysphingolipids are a subset of sphingolipids containing 2-hydroxy fatty acids. The 2-hydroxylation occurs during de novo ceramide synthesis and is catalyzed by fatty acid 2-hydroxylase (also known as fatty acid alpha-hydroxylase). In mammals, 2-hydroxysphingolipids are present abundantly in brain because the major myelin lipids galactosylceramides and sulfatides contain 2-hydroxy fatty acids. Here we report identification and characterization of a human gene that encodes a fatty acid 2-hydroxylase. Data base searches revealed a human homologue of the yeast ceramide 2-hydroxylase gene (FAH1), which we named FA2H. The FA2H gene encodes a 372-amino acid protein with 36% identity and 46% similarity to yeast Fah1p. The amino acid sequence indicates that FA2H protein contains an N-terminal cytochrome b5 domain and four potential transmembrane domains. FA2H also contains the iron-binding histidine motif conserved among membrane-bound desaturases/hydroxylases. COS7 cells expressing human FA2H contained 3–20-fold higher levels of 2-hydroxyceramides (C16, C18, C24, and C24:1) and 2-hydroxy fatty acids compared with control cells. Microsomal fractions prepared from transfected COS7 cells showed tetracosanoic acid 2-hydroxylase activities in an NADPH- and NADPH: cytochrome P-450 reductase-dependent manner. FA2H lacking the N-terminal cytochrome b5 domain had little activity,

ORDERING INFORMATION

CATALOG NUMBER
X1698P

SIZE
100 µg

FORM
Unconjugated

HOST/CLONE
Rabbit

FORMULATION
Provided as solution in phosphate buffered saline with 0.08% sodium azide

CONCENTRATION
1 mg/ml

ISOTYPE
N/A

APPLICATIONS
Western Blot

IMMUNOGEN

Synthetic peptide derived from human fatty acid 2-hydrolase (FA2H) protein.

SPECIES REACTIVITY

Human

COMMENTS

Antibody can be used for Western blotting (5–10 µg/ml) and ELISA. Other applications no tested. Optimal concentration should be evaluated by serial dilutions.

STORAGE

Product should be stored at -20°C. Aliquot to avoid freeze/thaw cycles

STABILITY

Products are stable for one year from purchase when stored properly

For research use only. Not for use in human diagnostics or therapeutics.

POSITIVE CONTROL/TISSUE EXPRESSION

Pancreas

SHIP CONDITIONS

Ship at ambient temperature, freeze upon arrival

REFERENCES

1. Alderson NL, Walla MD, Hama H. A novel method for the measurement of in vitro fatty acid 2-hydroxylase activity by gas chromatography-mass spectrometry. *J Lipid Res.* 2005 Jul;46(7):1569–75. Epub 2005 May 1.
2. Eckhardt M, Yaghoofam A, Fewou SN, Zoller I, Gieselmann V. A mammalian fatty acid hydroxylase responsible for the formation of alpha-hydroxylated galactosylceramide in myelin. *Biochem J.* 2005 May 15;388(Pt 1):245–54.
3. Alderson NL, Rembiesa BM, Walla MD, Bielawska A, Bielawski J, Hama H. The human FA2H gene encodes a fatty acid 2-hydroxylase. *J Biol Chem.* 2004 Nov 19;279(47):48562–8. Epub 2004 Aug 27.

LAST MODIFIED 2/28/2006

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