



FTO Antibody (Clone FT86-4)

Mouse Monoclonal Antibody Catalog # ABV11249

Specification

FTO Antibody (Clone FT86-4) - Product Information

Application WB, E, IP
Primary Accession
Reactivity Human, Rat
Host Mouse
Clonality Monoclonal
Isotype Mouse IgG1k
Calculated MW 58282

FTO Antibody (Clone FT86-4) - Additional Information

Gene ID 79068

Application & Usage ELISA, IP, Western Blot

Western Bio

Other Names FTO; KIAA1752;

Alpha-ketoglutarate-dependent dioxygenase FTO; Fat mass and obesity-associated protein.

Target/Specificity FTO

Antibody Form Liquid

Appearance Colorless liquid

Formulation

0.2 µm-filtered solution in PBS, pH 7.4

Handling

The antibody solution should be gently mixed before use.

Reconstitution & Storage -20 °C

Background Descriptions

Precautions

FTO Antibody (Clone FT86-4) - Background

FTO (Fat mass-and obesity-associated gene) is the responsible gene for mouse 'fused toes' mutation. An association between FTO genotype and type 2 diabetes has been confirmed. The presence of the FTO rs9939609 A-allele was found to be positively correlated with other symptoms of the metabolic syndrome, including higher fasting insulin, glucose, triglycerides, and lower HDL-cholesterol.



FTO Antibody (Clone FT86-4) is for research use only and not for use in diagnostic or therapeutic procedures.

FTO Antibody (Clone FT86-4) - Protein Information

Name FTO {ECO:0000303|PubMed:17496892, FCO:0000312|HGNC:HGNC:24678}

ECO:0000312|HGNC:HGNC:24678} **Function** RNA demethylase that mediates oxidative demethylation of different RNA species, such as mRNAs, tRNAs and snRNAs, and acts as a regulator of fat mass, adipogenesis and energy homeostasis (PubMed:22002720, PubMed: 26458103, PubMed:28002401, PubMed:30197295, PubMed:26457839, PubMed:25452335). Specifically demethylates N(6)methyladenosine (m6A) RNA, the most prevalent internal modification of

target="_blank">25452335). Specifically demethylates N(6)-methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed:22002720" target="_blank">22002720, PubMed:<a href="http://www.uniprot.org/citations/26458103"

target="_blank">26458103,

PubMed:<a href="http://www.uniprot.org/ci tations/30197295"

target=" blank">30197295,

PubMed:<a href="http://www.uniprot.org/ci tations/26457839"

target="_blank">26457839,

PubMed:<a href="http://www.uniprot.org/ci tations/25452335"

target="_blank">25452335). M6A demethylation by FTO affects mRNA

expression and stability (PubMed:<a href="



http://www.uniprot.org/citations/30197295" target=" blank">30197295). Also able to demethylate m6A in U6 small nuclear RNA (snRNA) (PubMed:30197295). Mediates demethylation of N(6),2'-Odimethyladenosine cap (m6A(m)), by demethylating the N(6)- methyladenosine at the second transcribed position of mRNAs and U6 snRNA (PubMed: ht tp://www.uniprot.org/citations/28002401" target=" blank">28002401, PubMed:30197295). Demethylation of m6A(m) in the 5'-cap by FTO affects mRNA stability by promoting susceptibility to decapping (PubMed:28002401). Also acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs (PubMed:30197295). Has no activity towards 1-methylguanine (PubMed:20376003). Has no detectable activity towards double-stranded DNA (PubMed:20376003). Also able to repair alkylated DNA and RNA by oxidative demethylation: demethylates single-stranded RNA containing 3-methyluracil, single- stranded DNA containing 3-methylthymine and has low demethylase activity towards single-stranded DNA containing 1-methyladenine or 3- methylcytosine (PubMed:18775698, PubMed: 20376003). Ability to repair alkylated DNA and RNA is however unsure in vivo (PubMed:18775698, PubMed:20376003). Involved in the regulation of fat mass, adipogenesis

and body weight, thereby contributing to



the regulation of body size and body fat accumulation (PubMed:18775698, PubMed:20376003). Involved in the regulation of thermogenesis and the control of adipocyte differentiation into brown or white fat cells (PubMed:26287746). Regulates activity of the dopaminergic midbrain circuitry via its ability to demethylate m6A in mRNAs (By similarity). Plays an oncogenic role in a number of acute myeloid leukemias by enhancing leukemic oncogene-mediated cell transformation: acts by mediating m6A demethylation of target transcripts such as MYC, CEBPA, ASB2 and RARA, leading to promote their expression (PubMed:28017614, PubMed:29249359).

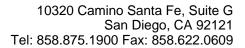
Cellular Location

Nucleus. Nucleus speckle. Cytoplasm Note=Localizes mainly in the nucleus, where it is able to demethylate N(6)-methyladenosine (m6A) and N(6),2'-O-dimethyladenosine cap (m6A(m)) in U6 small nuclear RNA (snRNA), N(1)-methyladenine from tRNAs and internal m6A in mRNAs (PubMed:30197295). In the cytoplasm, mediates demethylation of m6A and m6A(m) in mRNAs and N(1)-methyladenine from tRNAs (PubMed:30197295).

Tissue Location

Ubiquitously expressed, with relatively high expression in adrenal glands and brain; especially in hypothalamus and pituitary (PubMed:17434869, PubMed:17496892). Highly expressed in highly expressed in acute myeloid leukemias (AML) with t(11;11)(q23;23) with KMT2A/MLL1 rearrangements, t(15;17)(q21;q21)/PML-RARA, FLT3-ITD, and/or NPM1 mutations (PubMed:28017614).

FTO Antibody (Clone FT86-4) - Protocols





Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- <u>Immunofluorescence</u>
- Immunoprecipitation
- Flow Cytomety
- Cell Culture