

FTO Antibody (Clone FT86-4)
Mouse Monoclonal Antibody
Catalog # ABV11249**Specification****FTO Antibody (Clone FT86-4) - Product Information**

Application	WB, E, IP
Primary Accession	Q9C0B1
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****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

HandlingThe 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,
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 messenger RNA (mRNA) in higher eukaryotes (PubMed:22002720, PubMed:26458103, PubMed:30197295, PubMed:26457839, PubMed: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:<a href="http://www
.uniprot.org/citations/30197295"
target="_blank">30197295). Mediates
demethylation of N(6),2'-O-
dimethyladenosine cap (m6A(m)), by
demethylating the N(6)- methyladenosine
at the second transcribed position of
mRNAs and U6 snRNA (PubMed:<a href="ht
tp://www.uniprot.org/citations/28002401"
target="_blank">28002401,
PubMed:<a href="http://www.uniprot.org/ci
tations/30197295"
target="_blank">30197295).
Demethylation of m6A(m) in the 5'-cap by
FTO affects mRNA stability by promoting
susceptibility to decapping (PubMed:<a href
="http://www.uniprot.org/citations/2800240
1" target="_blank">28002401). Also
acts as a tRNA demethylase by removing
N(1)-methyladenine from various tRNAs
(PubMed:<a href="http://www.uniprot.org/c
itations/30197295"
target="_blank">30197295). Has no
activity towards 1-methylguanine
(PubMed:<a href="http://www.uniprot.org/c
itations/20376003"
target="_blank">20376003). Has no
detectable activity towards double-stranded
DNA (PubMed:<a href="http://www.uniprot.
org/citations/20376003"
target="_blank">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:<a href="http://www.uniprot.org/c
itations/18775698"
target="_blank">18775698,
PubMed:<a href="http://www.uniprot.org/ci
tations/20376003"
target="_blank">20376003). Ability to
repair alkylated DNA and RNA is however
unsure in vivo (PubMed:<a href="http://ww
w.uniprot.org/citations/18775698"
target="_blank">18775698,
PubMed:<a href="http://www.uniprot.org/ci
tations/20376003"
target="_blank">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](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)