

## KO-Validated Anti-FTO Mouse Monoclonal Antibody

### Mouse monoclonal antibody

Catalog # AGI2440

### Specification

### KO-Validated Anti-FTO Mouse Monoclonal Antibody - Product Information

Application	WB, FC
Primary Accession	<a href="#">Q9C0B1</a>
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Mouse IgG1
Calculated MW	Predicted, 58 kDa; observed, 58 kDa kDa
Gene Name	FTO
Aliases	FTO; FTO Alpha-Ketoglutarate Dependent Dioxygenase; KIAA1752; ALKBH9; U6 Small Nuclear RNA (2'-O-Methyladenosine-N(6)-)-Demethylase FTO; U6 Small Nuclear RNA N(6)-Methyladenosine-Demethylase FTO; MRNA (2'-O-Methyladenosine-N(6)-)-Demethylase FTO; Alpha-Ketoglutarate-Dependent Dioxygenase FTO; Intragenic FTO Exon 9 Containing Transcript; MRNA N(6)-Methyladenosine Demethylase FTO; Fat Mass And Obesity-Associated Protein; TRNA N1-Methyl Adenine Demethylase FTO; Fat Mass And Obesity Associated; M6A(M)-Demethylase FTO; AlkB Homolog 9; MGC5149; IFEX9; FTO, Alpha-Ketoglutarate; Dependent Dioxygenase; Alpha-Ketoglutarate-Dependent Dioxygenase; EC 1.14.11.53; EC 1.14.11.-; BMIQ14; GDFD
Immunogen	Recombinant protein of human FTO

### KO-Validated Anti-FTO Mouse Monoclonal Antibody - Additional Information

Gene ID 79068

#### Other Names

Alpha-ketoglutarate-dependent dioxygenase FTO, Fat mass and obesity-associated protein, U6 small nuclear RNA (2'-O-methyladenosine-N(6)-)-demethylase FTO, 1.14.11.-, U6 small nuclear RNA N(6)-methyladenosine-demethylase FTO, 1.14.11.-, mRNA (2'-O-methyladenosine-N(6)-)-demethylase FTO, m6A(m)-demethylase FTO, 1.14.11.-, mRNA N(6)-methyladenosine demethylase FTO, 1.14.11.53, tRNA N1-methyl adenine demethylase FTO, 1.14.11.-, FTO {ECO:0000303|PubMed:17496892, ECO:0000312|HGNC:HGNC:24678}

### KO-Validated Anti-FTO Mouse Monoclonal Antibody - 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:<a href="http://www.uniprot.org/citations/22002720" target="\_blank">22002720</a>, PubMed:<a href="http://www.uniprot.org/citations/25452335" target="\_blank">25452335</a>, PubMed:<a href="http://www.uniprot.org/citations/26457839" target="\_blank">26457839</a>, PubMed:<a href="http://www.uniprot.org/citations/26458103" target="\_blank">26458103</a>, PubMed:<a href="http://www.uniprot.org/citations/28002401" target="\_blank">28002401</a>, PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). Specifically demethylates N(6)- methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed:<a href="http://www.uniprot.org/citations/22002720" target="\_blank">22002720</a>, PubMed:<a href="http://www.uniprot.org/citations/25452335" target="\_blank">25452335</a>, PubMed:<a href="http://www.uniprot.org/citations/26457839" target="\_blank">26457839</a>, PubMed:<a href="http://www.uniprot.org/citations/26458103" target="\_blank">26458103</a>, PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). M6A demethylation by FTO affects mRNA expression and stability (PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). Also able to demethylate m6A in U6 small nuclear RNA (snRNA) (PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). 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="http://www.uniprot.org/citations/28002401" target="\_blank">28002401</a>, PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). 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/28002401" target="\_blank">28002401</a>). Also acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs (PubMed:<a href="http://www.uniprot.org/citations/30197295" target="\_blank">30197295</a>). Has no activity towards 1-methylguanine (PubMed:<a href="http://www.uniprot.org/citations/20376003" target="\_blank">20376003</a>). Has no detectable activity towards double-stranded DNA (PubMed:<a href="http://www.uniprot.org/citations/20376003" target="\_blank">20376003</a>). 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/citations/18775698" target="\_blank">18775698</a>, PubMed:<a href="http://www.uniprot.org/citations/20376003" target="\_blank">20376003</a>). Ability to repair alkylated DNA and RNA is however unsure in vivo (PubMed:<a href="http://www.uniprot.org/citations/18775698" target="\_blank">18775698</a>, PubMed:<a href="http://www.uniprot.org/citations/20376003" target="\_blank">20376003</a>). Involved in the regulation of fat mass, adipogenesis and body weight, thereby contributing to the regulation of body size and body fat accumulation (PubMed:<a href="http://www.uniprot.org/citations/18775698" target="\_blank">18775698</a>, PubMed:<a href="http://www.uniprot.org/citations/20376003" target="\_blank">20376003</a>). Involved in the regulation of thermogenesis and the control of adipocyte differentiation into brown or white fat cells (PubMed:<a href="http://www.uniprot.org/citations/26287746" target="\_blank">26287746</a>). 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:<a href="http://www.uniprot.org/citations/28017614" target="\_blank">28017614</a>, PubMed:<a href="http://www.uniprot.org/citations/29249359" target="\_blank">29249359</a>).

### 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

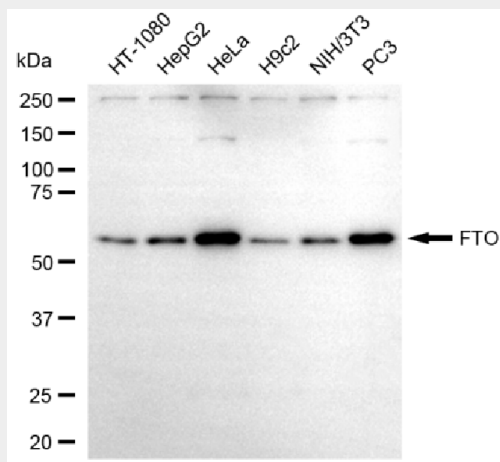
Ubiquitously expressed, with relatively high expression in adrenal glands and brain; especially in hypothalamus and pituitary (PubMed:17434869, PubMed:17496892). Highly expressed in highly expressed in acute myeloid leukemias (AML) with t(11;11)(q23;23) with KMT2A/MLL1 rearrangements, t(15;17)(q21;q21)/PML-RARA,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

### KO-Validated Anti-FTO Mouse Monoclonal Antibody - Protocols

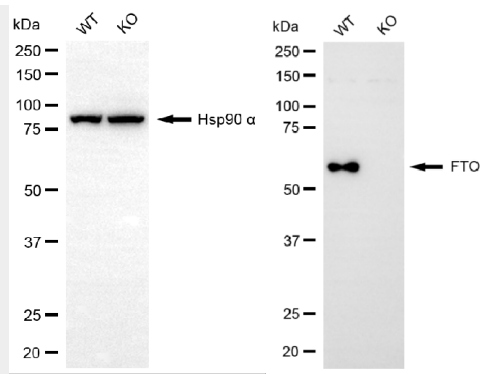
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

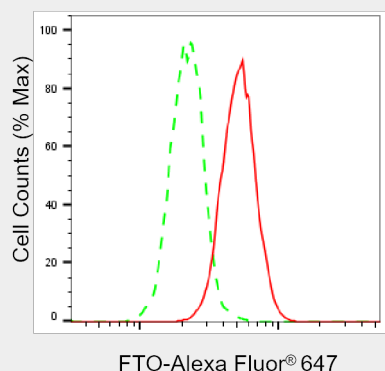
### KO-Validated Anti-FTO Mouse Monoclonal Antibody - Images



Western blotting analysis using anti-FTO antibody (Cat#AGI2440). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-FTO antibody (Cat#AGI2440, 1:2,500) and HRP-conjugated goat anti-mouse secondary antibody respectively.



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