

# FTO Rabbit mAb

Catalog # AP75458

## Product Information

Application	WB, IHC-P, IHC-F, ICC
Primary Accession	<a href="#">Q9C0B1</a>
Reactivity	Human
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	58282

## Additional Information

Gene ID	79068
Other Names	FTO
Dilution	WB~~1/500-1/1000 IHC-P~~N/A IHC-F~~N/A ICC~~N/A
Format	50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

Name	FTO {ECO:0000303   PubMed:17496892, ECO:0000312   HGNC:HGNC:24678}
Function	<p>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="#">22002720</a>, PubMed:<a href="#">25452335</a>, PubMed:<a href="#">26457839</a>, PubMed:<a href="#">26458103</a>, PubMed:<a href="#">28002401</a>, PubMed:<a href="#">30197295</a>). Specifically demethylates N(6)-methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed:<a href="#">22002720</a>, PubMed:<a href="#">25452335</a>, PubMed:<a href="#">26457839</a>, PubMed:<a href="#">26458103</a>, PubMed:<a href="#">30197295</a>). M6A demethylation by FTO affects mRNA expression and stability (PubMed:<a href="#">30197295</a>). Also able to demethylate m6A in U6 small nuclear RNA (snRNA) (PubMed:<a href="#">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="#">28002401</a>, PubMed:<a href="#">30197295</a>). Demethylation of m6A(m) in the 5'-cap by FTO affects mRNA stability by promoting susceptibility to decapping (PubMed:<a href="#">28002401</a>). Also acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs (PubMed:<a href="#">30197295</a>). Has no activity towards 1-methylguanine (PubMed:<a href="#">20376003</a>). Has no detectable activity</p>

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](#)).

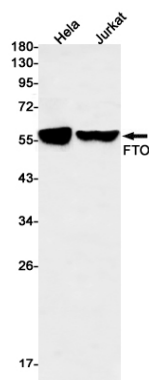
### Cellular Location

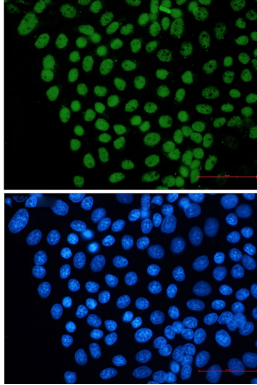
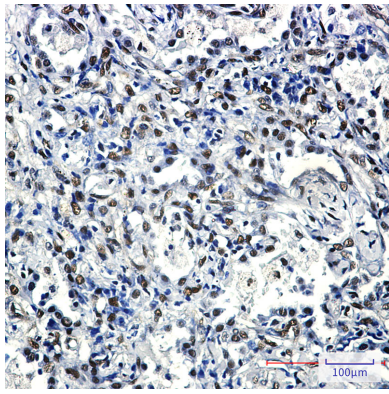
Nucleus. Nucleus speckle. Cytoplasm Note=Localizes mainly in the nucleus, where it is able to demethylate N(6)-methyladenosine (m6A) and N(6),2'-O-dimethyladenosine cap (m6A(m)) in U6 small nuclear RNA (snRNA), N(1)-methyladenine from tRNAs and internal m6A in mRNAs (PubMed:30197295). In the cytoplasm,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

## Images





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