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Goat Anti-FTO (Mouse) Antibody

Peptide-affinity purified goat antibody

Catalog # AF1448a

Specification

Goat Anti-FTO (Mouse) Antibody - Product Information

Application	**WB**
Primary Accession	Q9C0B1
Other Accession	NP_036066, 79068, 26383 (mouse), 291905 (rat)
Reactivity	**Human**
Predicted	**Mouse, Rat, Pig, Dog**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**100ug/200ul**
Isotype	**IgG**
Calculated MW	**58282**

Goat Anti-FTO (Mouse) Antibody - Additional Information

Gene ID 79068

Other Names
Alpha-ketoglutarate-dependent dioxygenase FTO, 1.14.11.-, Fat mass and obesity-associated protein, FTO, KIAA1752

Format
0.5 mg IgG/ml in Tris saline (20mM Tris pH7.3, 150mM NaCl), 0.02% sodium azide, with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Goat Anti-FTO (Mouse) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Goat Anti-FTO (Mouse) 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: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:30197295). Also able to demethylate m6A in U6 small nuclear RNA (snRNA) (PubMed: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: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).

Goat Anti-FTO (Mouse) 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 Cytomety
- Cell Culture

Goat Anti-FTO (Mouse) Antibody - Images



AF1448a (0.03 µg/ml) staining of Human Pancreas lysate (35 µg protein in RIPA buffer). Primary incubation was 1 hour. Detected by chemiluminescence.

Goat Anti-FTO (Mouse) Antibody - References

FTO effect on energy demand versus food intake. Speakman JR. Nature, 2010 Apr 1. PMID 20360686.
Hypothalamic FTO is associated with the regulation of energy intake not feeding reward. Olszewski PK, et al. BMC Neurosci, 2009 Oct 27. PMID 19860904.
A mouse model for the metabolic effects of the human fat mass and obesity associated FTO gene. Church C, et al. PLoS Genet, 2009 Aug. PMID 19680540.
Loss-of-function mutation in the dioxygenase-encoding FTO gene causes severe growth retardation and multiple malformations. Boissel S, et al. Am J Hum Genet, 2009 Jul. PMID 19559399.
Inactivation of the Fto gene protects from obesity. Fischer J, et al. Nature, 2009 Apr 16. PMID 19234441.