

Product Name: FTO (19W13) Rabbit Monoclonal Antibody
Catalog #: AMRe11173

Summary

Production Name	FTO (19W13) Rabbit Monoclonal Antibody
Description	Rabbit Monoclonal Antibody
Host	Rabbit
Application	WB
Reactivity	Human

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Monoclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Supplied in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% New type preservative N and 0.05% BSA.
Purification	Affinity purification

Immunogen

Gene Name	FTO {ECO:0000303 PubMed:17496892, ECO:0000312 HGNC:HGNC:24678}
Alternative Names	ALKBH9; Fto; GDFD; Protein fatso;
Gene ID	79068.0
SwissProt ID	Q9C0B1.A synthetic peptide of human FTO

Application

Dilution Ratio	WB: 1:1000
Molecular Weight	58kDa

Background

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Dioxygenase that repairs alkylated DNA and RNA by oxidative demethylation. Has highest activity towards single-stranded RNA containing 3-methyluracil, followed by single-stranded DNA containing 3-methylthymine. 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](http://www.uniprot.org/citations/22002720), PubMed: [26458103](http://www.uniprot.org/citations/26458103), PubMed: [28002401](http://www.uniprot.org/citations/28002401), PubMed: [30197295](http://www.uniprot.org/citations/30197295), PubMed: [26457839](http://www.uniprot.org/citations/26457839), PubMed: [25452335](http://www.uniprot.org/citations/25452335)). Specifically demethylates N(6)- methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed: [22002720](http://www.uniprot.org/citations/22002720), PubMed: [26458103](http://www.uniprot.org/citations/26458103), PubMed: [30197295](http://www.uniprot.org/citations/30197295), PubMed: [26457839](http://www.uniprot.org/citations/26457839), PubMed: [25452335](http://www.uniprot.org/citations/25452335)). M6A demethylation by FTO affects mRNA expression and stability (PubMed: [30197295](http://www.uniprot.org/citations/30197295)). Also able to demethylate m6A in U6 small nuclear RNA (snRNA) (PubMed: [30197295](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/28002401), PubMed: [30197295](http://www.uniprot.org/citations/30197295)). Demethylation of m6A(m) in the 5'-cap by FTO affects mRNA stability by promoting susceptibility to decapping (PubMed: [28002401](http://www.uniprot.org/citations/28002401)). Also acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs (PubMed: [30197295](http://www.uniprot.org/citations/30197295)). Has no activity towards 1-methylguanine (PubMed: [20376003](http://www.uniprot.org/citations/20376003)). Has no detectable activity towards double-stranded DNA (PubMed: [20376003](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/18775698), PubMed: [20376003](http://www.uniprot.org/citations/20376003)). Ability to repair alkylated DNA and RNA is however unsure in vivo (PubMed: [18775698](http://www.uniprot.org/citations/18775698), PubMed: [20376003](http://www.uniprot.org/citations/20376003)). Involved in the regulation of fat mass,

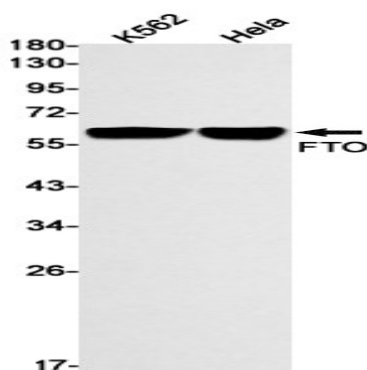
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adipogenesis and body weight, thereby contributing to the regulation of body size and body fat accumulation (PubMed:18775698, PubMed:20376003). Involved in the regulation of thermogenesis and the control of adipocyte differentiation into brown or white 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).

Research Area

Image Data



Western blot detection of FTO in K562, HeLa cell lysates using FTO antibody (1:1000 diluted).

Note

For research use only.