

**FTO Antibody (N-term)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP6976a****Specification**

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**FTO Antibody (N-term) - Product Information**

Application	FC, IHC-P, WB,E
Primary Accession	<a href="#">O9C0B1</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	58282
Antigen Region	1-30

**FTO Antibody (N-term) - Additional Information****Gene ID** 79068**Other Names**

Alpha-ketoglutarate-dependent dioxygenase FTO, 11411-, Fat mass and obesity-associated protein, FTO, KIAA1752

**Target/Specificity**

This FTO antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human FTO.

**Dilution**

FC~~1:10~50

IHC-P~~1:50~100

WB~~1:1000

E~~Use at an assay dependent concentration.

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**Storage**

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

**Precautions**

FTO Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

**FTO Antibody (N-term) - 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:[25452335](#), PubMed:[26457839](#), PubMed:[26458103](#), PubMed:[28002401](#), PubMed:[30197295](#)). Specifically demethylates N(6)- methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed:[22002720](#), PubMed:[25452335](#), PubMed:[26457839](#), PubMed:[26458103](#), PubMed:[30197295](#)). 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**

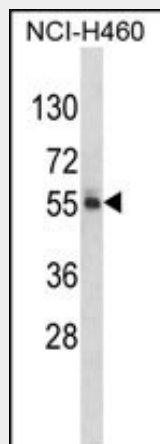
Ubiquitously expressed, with relatively high expression in adrenal glands and brain; especially in hypothalamus and pituitary (PubMed:[17434869](#), PubMed:[17496892](#)). Highly expressed in highly expressed in acute myeloid leukemias (AML) with t(11;11)(q23;23) with KMT2A/MLL1 rearrangements, t(15;17)(q21;q21)/PML-RARA,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

#### **FTO Antibody (N-term) - Protocols**

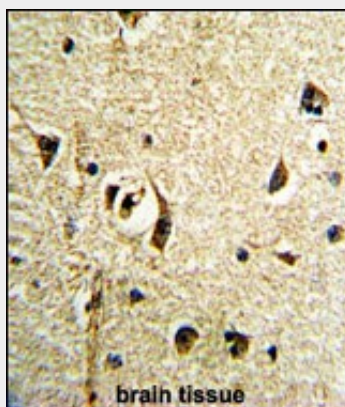
Provided below are standard protocols that you may find useful for product applications.

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

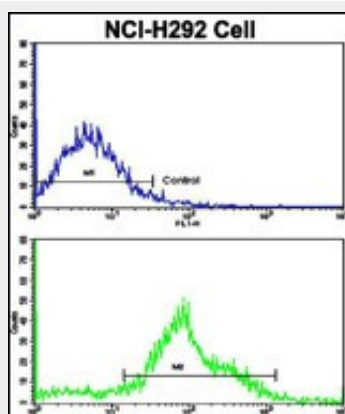
## FTO Antibody (N-term) - Images



Western blot analysis of FTO Antibody (N-term) (Cat. #AP6976a) in NCI-H460 cell line lysates (35ug/lane). FTO (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human brain tissue reacted with FTO Antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Flow cytometric analysis of NCI-H292 cells using FTO Antibody (N-term)(bottom histogram) compared to a negative control cell (top histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

## FTO Antibody (N-term) - Background

The precise function of FTO remains to be determined.

#### **FTO Antibody (N-term) - References**

Scott, L.J., et.al., Science 316 (5829), 1341-1345 (2007)