Data Sheet (Cat.No.TMAH-00463)

Anti-FTO Antibody (6Y581)

Product Details

Ig Type:	Rabbit IgG
Reactivity:	Human
Conjugation:	Unconjugated
Clone:	6Y581
Purification:	Affinity-chromatography

Applications

Verified Activity:	1. Western Blot -Positive WB detected in: 293T whole cell lysate, SH-SY5Y whole cell lysate, Raji whole cell lysate, Colo320 whole cell lysate, A549 whole cell lysate, PC3 whole cell lysate -All lanes: FTO antibody at 0.7μg/ml -Secondary: Goat polyclonal to rabbit IgG at 1/50000 dilution -Predicted band size: 59, 15, 7, 13 KDa -Observed band size: 59 KDa 2. IHC image of TMAH-00463 diluted at 1:70 and staining in paraffin-embedded human glioma cancer performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system. 3. IHC image of TMAH-00463 diluted at 1:70 and staining in paraffin-embedded human skeletal muscle tissue performed on a Leica BondTM system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a biotinylated secondary antibody and visualized using an HRP conjugated SP system. 4. Immunofluorescence staining of Hela cells with TMAH-00463 at 1:23, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeabilized using 0.2% Triton X-100 and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. The secondary antibody was Alexa Fluor 488-congugated AffiniPure Goat Anti-Rabbit IgG (H+L).
Application:	ELISA,IF,IHC,WB
Recommended	WB:1:500-1:5000; IHC:1:50-1:200; IF:1:20-1:200.

Properties

Stability & Storage:	Store at -20°C or -80°C for 12 months. Avoid repeated freeze-thaw cycles.
Shipping:	Shipping with blue ice.

Antigen Details

Immunogen:	A synthetic peptide: Human FTO
Antigen Species:	Human
Gene ID:	79068
Uniprot ID:	Q9C0B1
Biology Area:	Neuroscience

Research Background

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. Specifically demethylates N(6)-methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes. M6A demethylation by FTO affects mRNA expression and stability. Also able to demethylate m6A in U6 small nuclear RNA (snRNA). 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. Demethylation of m6A(m) in the 5'-cap by FTO affects mRNA stability by promoting susceptibility to decapping. Also acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs. Has no activity towards 1-methylguanine. Has no detectable activity towards double-stranded DNA. 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. Ability to repair alkylated DNA and RNA is however unsure in vivo. Involved in the regulation of fat mass, adipogenesis and body weight, thereby contributing to the regulation of body size and body fat accumulation. Involved in the regulation of thermogenesis and the control of adipocyte differentiation into brown or white fat cells. Regulates activity of the dopaminergic midbrain circuitry via its ability to demethylate m6A in mRNAs. 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.

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