

Recombinant Mouse Fto Protein, Myc/DDK-tagged

Cat. No. Fto-3101M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Purified recombinant protein of mouse full-length fat mass and obesity associated (Fto), with C-terminal MYC/DDK tag, expressed in HEK293T cells.
Species	Mouse
Source	HEK293
Description	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 N6-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 N6,2'-O-dimethyladenosine cap (m6A(m)), by demethylating the N6-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 N1-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

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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.

Molecular Mass	58 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 µg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Fto fat mass and obesity associated [<i>Mus musculus</i> (house mouse)]
Official Symbol	Fto
Synonyms	FTO; fat mass and obesity associated; alpha-ketoglutarate-dependent dioxygenase FTO; protein fto; protein fatso; fat mass and obesity-associated protein; AW743446; mKIAA1752
Gene ID	26383
mRNA Refseq	NM_011936

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Protein Refseq	NP_036066
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UniProt ID	Q8BGW1
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