

## FTO Protein, Human

<b>Cat. No.:</b>	HY-P701887
<b>Synonyms:</b>	FTO; Alpha-ketoglutarate-dependent dioxygenase FTO; Fat mass and obesity-associated protein; U6 small nuclear RNA (2'-O-methyladenosine-N(6)-)-demethylase FTO; U6 small nuclear RNA N(6)-methyladenosine-demethylase FTO; mRNA (2'-O-methyladenosine-N(6)-)-demethylase FTO; m6A(m)-demethylase FTO; mRNA N(6)-methyladenosine demethylase FTO; tRNA N1-methyl adenine demethylase FTO
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	Q9C0B1 (T32-P505)
<b>Gene ID:</b>	79068
<b>Molecular Weight:</b>	Approximately 54.5 kDa

### PROPERTIES

<b>Appearance</b>	Solution
<b>Formulation</b>	Supplied as a 0.22 µm filtered solution of 50 mM HEPES, 200 mM NaCl, 20% glycerol, 1 mM DTT, pH 7.5.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	Please use rapid thawing with running water to thaw the protein.
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice

### DESCRIPTION

<b>Background</b>	<p>The FTO protein functions as an RNA demethylase, mediating oxidative demethylation across various RNA species, including mRNAs, tRNAs, and snRNAs. It plays a crucial role in regulating fat mass, adipogenesis, and energy homeostasis. Specifically, FTO targets the most prevalent internal modification of mRNA, N(6)-methyladenosine (m6A), affecting mRNA expression and stability. Additionally, FTO can demethylate m6A in U6 small nuclear RNA (snRNA) and N(6),2'-O-dimethyladenosine cap (m6A(m)). The demethylation of m6A(m) in the 5'-cap by FTO influences mRNA stability by promoting susceptibility to decapping. Acting as a tRNA demethylase, FTO removes N(1)-methyladenine from various tRNAs. Beyond its role in RNA modification, FTO contributes to the regulation of fat mass, adipogenesis, body weight, and thermogenesis. It also plays a significant role in the regulation of dopaminergic midbrain circuitry and acts as an oncogenic factor in certain acute myeloid leukemias by enhancing the expression of target transcripts such as MYC, CEBPA, ASB2, and RARA through m6A demethylation.</p>
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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