

PRODUCT INFORMATION



FTO (mouse) Monoclonal Antibody (Clone FT 62-6)

Item No. 10814

Overview and Properties

Contents:	This vial contains affinity-purified monoclonal antibody.
Synonyms:	Fat Mass- and Obesity-associated Protein, α -Ketoglutarate-dependent Dioxygenase FTO
Immunogen:	Recombinant human FTO
Species Reactivity:	(+) Mouse FTO ; (-) Human and Rat FTO; other species not tested
Uniprot No.:	Q8BGW1
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥ 1 year
Storage Buffer:	0.2 μ m filtered solution in PBS, pH 7.4
Concentration:	1 mg/ml
Clone:	FT 62-6
Host:	Mouse
Isotype:	IgG1k
Applications:	ELISA, Immunohistochemistry (IHC), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilutions for ELISA (direct or indirect), IHC (paraffin sections), and WB are 1:2,000-1:5,000, 1:100-1:500, and 1:2,000-1:5,000, respectively. The recommended starting concentration for IP is 5 μ g/ml per sample in a final reaction of 500-1,000 μ l. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: Recombinant mouse FTO (10 ng)
Lane 2: 3T3L1 cell lysate (100 μ g)

Western blot analysis of FTO

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 06/15/2020

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Fat mass and obesity-associated (FTO) protein is a nuclear-residing N⁶-methyladenosine (m⁶A) RNA demethylase that is encoded by the *FTO* gene in humans.¹⁻³ It is composed of an N-terminal domain similar in structure to members of the AlkB non-heme iron-containing dioxygenase family and a C-terminal domain that is not similar to other known domains.⁴ The N-terminal domain contains a loop not found in other AlkB proteins that may be responsible for its specificity for single-stranded nucleic acids. *FTO* is highly expressed during development and in the adult brain, adipose tissue, and muscle and its expression is modified by the availability of essential amino acids *in vitro* and following fasting or a chronic high-fat diet *in vivo* in mice.^{3,5,6} *FTO* regulates mRNA splicing and is required for adipogenesis.^{1,7} Knockdown of *Fto* in mice increases m⁶A-containing transcripts of the adipogenesis-related gene *Runx1t1*, enhances binding of the splicing regulatory protein Srsf2 to *Runx1t1*, which induces the inclusion of *Runx1t1* exon 6 and the production of long *Rnx1t1* transcripts, and leads to inhibition of pre-adipocyte differentiation. *Fto* is associated with obesity in transgenic mouse models, with overexpression increasing food intake and weight gain and knockout reducing body weight, body length, fat mass, and white adipose tissue, as well as increasing energy expenditure while decreasing locomotor activity.² *FTO* SNPs are associated with body mass index and obesity risk in humans.^{6,8} Cayman's *FTO* (mouse) Monoclonal Antibody (Clone FT 62-6) can be used for ELISA, immunohistochemistry (IHC), immunoprecipitation (IP), and Western blot applications. The antibody recognizes *FTO* from mouse samples.

References

1. Del Poeta, M., Chen, S.-F., Von Hoff, D., *et al.* Comparison of *in vitro* activities of camptothecin and nitidine derivatives against fungal and cancer cells. *Antimicrob. Agents Chemother.* **43(12)**, 2862-2868 (1999).
2. Fischer, J., Koch, L., Emmerling, C., *et al.* Inactivation of the *Fto* gene protects from obesity. *Nature* **458(7240)**, 894-899 (2009).
3. McTaggart, J.S., Lee, S., Iberl, M., *et al.* *FTO* is expressed in neurones throughout the brain and its expression is unaltered by fasting. *PLoS One* **6(11)**, e27968 (2011).
4. Han, Z., Niu, T., Chang, J., *et al.* Crystal structure of the *FTO* protein reveals basis for its substrate specificity. *Nature* **464(7292)**, 1205-1209 (2010).
5. Cheung, M.K., Gulati, P., O'Rahilly, S., *et al.* *FTO* expression is regulated by availability of essential amino acids. *Int. J. Obes. (Lond.)* **37(5)**, 744-747 (2013).
6. Gulati, P., Cheung, M.K., Antrobus, R., *et al.* Role for the obesity-related *FTO* gene in the cellular sensing of amino acids. *Proc. Natl. Acad. Sci. USA* **110(7)**, 2557-2562 (2013).
7. Ben-Haim, M.S., Moshitch-Moshkovitz, S., and Rechavi, G. *FTO*: Linking m⁶A demethylation to adipogenesis. *Cell Res.* **25(1)**, 3-4 (2015).
8. Loos, R.J.F. and Yeo, G.S.H. The bigger picture of *FTO*: The first GWAS-identified obesity gene. *Nat. Rev. Endocrinol.* **10(1)**, 51-61 (2014).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM