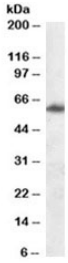
FTO Antibody / Fat mass and obesity associated protein (R35410)

Catalog No.	Formulation	Size
R35410-100UG	0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Predicted Reactivity	Mouse, Rat, Dog, Pig
Format	Antigen affinity purified
Host	Goat
Clonality	Polyclonal (goat origin)
Isotype	Goat Ig
Purity	Antigen affinity
Gene ID	79068
Applications	Western blot: 0.03-0.1ug/ml ELISA (peptide) LOD: 1:128000
Limitations	This FTO antibody is available for research use only.



Western blot testing of human pancreas lysate with FTO antibody at 0.03ug/ml. Predicted molecular weight ~58 kDa.

Description

FTO antibody recognizes Fat mass and obesity associated protein (FTO), a member of the iron- and alpha-ketoglutarate-dependent dioxygenase family that functions as an RNA-modifying enzyme. FTO is predominantly localized to the nucleus, with additional cytoplasmic distribution reported in certain cell types and pathological contexts. The protein is best known for its ability to remove methyl groups from specific RNA modifications, placing it at the center of RNA epigenetic regulation. Through this activity, FTO links cellular metabolic status to gene expression control at the post-

transcriptional level.

At a functional level, FTO regulates the dynamic methylation landscape of RNA, particularly modifications that influence RNA processing, stability, and translational efficiency. By modulating these marks, FTO affects how transcripts are spliced, exported, and translated, thereby shaping cellular programs related to growth, differentiation, and stress responses. FTO activity is sensitive to intracellular metabolite availability, reinforcing its role as a molecular sensor that connects nutrient conditions to RNA-based regulatory mechanisms. A FTO antibody supports research examining how RNA modification pathways respond to metabolic cues and environmental changes.

FTO is expressed across a wide range of tissues, with notable enrichment in the central nervous system. Within the brain, FTO expression has been observed in regions associated with appetite regulation, energy balance, and neurodevelopment. Beyond neural tissues, FTO is also detected in metabolically active organs and proliferative cell populations, reflecting its broad involvement in cellular homeostasis. Evaluation of FTO expression patterns can provide insight into how RNA demethylation contributes to tissue-specific regulation and adaptive responses.

From a disease and translational research perspective, FTO has gained significant attention due to strong genetic associations between the FTO locus and obesity-related traits in human populations. Altered FTO expression or activity has been linked to changes in energy balance, adipogenesis, and metabolic regulation. In addition to metabolic disorders, FTO has been implicated in cancer biology, where dysregulated RNA methylation may influence tumor cell growth, survival, and stress adaptation. Investigating FTO expression using a FTO antibody is therefore relevant to studies of metabolism, oncology, and RNA biology.

On a molecular scale, the FTO gene encodes a protein of approximately 58 kDa containing conserved catalytic residues required for dioxygenase activity. Proper function of FTO depends on its interaction with RNA substrates and associated regulatory proteins within the nucleus. Changes in FTO localization, abundance, or activity can significantly alter RNA modification profiles and downstream gene expression outcomes. A FTO antibody enables detection and analysis of FTO expression in diverse research settings, supporting investigations into RNA epigenetics and metabolic signaling, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the FTO antibody should be determined by the researcher.

Immunogen

Amino acids QQKPDCRPYWEKDD were used as the immunogen for this FTO antibody.

Storage

Aliquot and store the FTO antibody at -20oC.

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