

Ob (H-5): sc-393043

BACKGROUND

Although there is substantial evidence that body weight is physiologically regulated, the molecular basis of obesity is unknown. Five single-gene mutations in mice that result in an obese phenotype have been identified. The first such recessive obesity mutation, the obese mutation (Ob), was identified in 1950. Mutation of Ob (also designated leptin) results in profound obesity and type II diabetes as part of a syndrome that resembles morbid obesity in humans. It has been postulated that the Ob gene product may function as a component of a signaling pathway in adipose tissue that functions to regulate body fat depot size. The cloning and sequence analysis of the mouse Ob gene and its human homolog has been described. Ob encodes an adipose tissue-specific mRNA with a highly conserved 167 amino acid open reading frame. The predicted amino acid sequence is 84% identical between human and mouse and has the features of a secreted protein. A nonsense mutation in codon 105 has been found in the original congenic C57BL/6J Ob/Ob mouse strain.

REFERENCES

1. Friedman, J.M., et al. 1991. Molecular mapping of the mouse Ob mutation. *Genomics* 11: 1054-1062.
2. Friedman, J.M. and Leibel, R.L. 1992. Tackling a weighty problem. *Cell* 69: 217-220.
3. Rink, T.J. 1994. In search of a satiety factor. *Nature* 372: 406-407.
4. Zhang, Y., et al. 1994. Positional cloning of the mouse obese gene and its human homologue. *Nature* 372: 425-432.

CHROMOSOMAL LOCATION

Genetic locus: LEP (human) mapping to 7q32.1; Lep (mouse) mapping to 6 A3.3.

SOURCE

Ob (H-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 16-40 at the N-terminus of Ob of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ob (H-5) is available conjugated to agarose (sc-393043 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393043 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393043 PE), fluorescein (sc-393043 FITC), Alexa Fluor® 488 (sc-393043 AF488), Alexa Fluor® 546 (sc-393043 AF546), Alexa Fluor® 594 (sc-393043 AF594) or Alexa Fluor® 647 (sc-393043 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393043 AF680) or Alexa Fluor® 790 (sc-393043 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393043 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

Ob (H-5) is recommended for detection of precursor and mature Ob of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

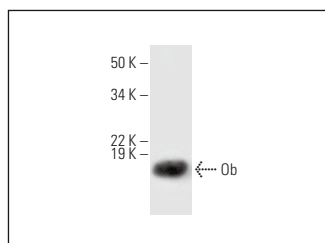
Suitable for use as control antibody for Ob siRNA (h): sc-37189, Ob siRNA (m): sc-37190, Ob shRNA Plasmid (h): sc-37189-SH, Ob shRNA Plasmid (m): sc-37190-SH, Ob shRNA (h) Lentiviral Particles: sc-37189-V and Ob shRNA (m) Lentiviral Particles: sc-37190-V.

Molecular Weight of Ob: 16 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Ob (H-5): sc-393043. Western blot analysis of human recombinant Ob.

SELECT PRODUCT CITATIONS

1. Yi, X., et al. 2017. Effects of obesity and exercise on testicular leptin signal transduction and testosterone biosynthesis in male mice. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 312: R501-R510.
2. Abruzzese, G.A., et al. 2019. Fetal programming by androgen excess in rats affects ovarian fuel sensors and steroidogenesis. *J. Dev. Orig. Health Dis.* 10: 645-658.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.