SANTA CRUZ BIOTECHNOLOGY, INC.

Ob (B-4): sc-28344

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 have 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: 425-431.
5. Isse, N., et al. 1995. Structural organization and chromosomal assignment of the human obese gene. J. Biol. Chem. 270: 27728-27733.
6. El-Atat, F., et al. 2004. Obesity and hypertension. Endocrinol. Metab. Clin. North Am. 32: 823-854.
7. Rahmouni, K. and Haynes, W.G. 2004. Leptin and the cardiovascular system. Recent Prog. Horm. Res. 59: 225-244.

CHROMOSOMAL LOCATION

Genetic locus: LEP (human) mapping to 7q32.1.

SOURCE

Ob (B-4) is a mouse monoclonal antibody raised against amino acids 22-167 of Ob of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ob (B-4) is available conjugated to agarose (sc-28344 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

STORAGE

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

APPLICATIONS

Ob (B-4) is recommended for detection of Ob of human origin by Western Blotting (starting dilution 1:100, dilution range), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

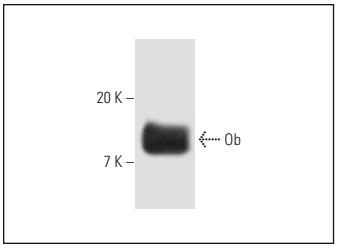
Suitable for use as control antibody for Ob siRNA (h): sc-37189, Ob shRNA Plasmid (h): sc-37189-SH and Ob shRNA (h) Lentiviral Particles: sc-37189-V.

Molecular Weight of Ob: 16 kDa.

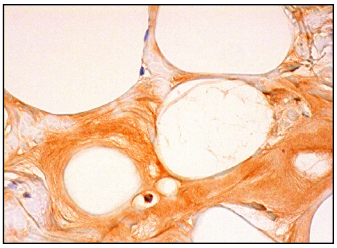
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Ob (B-4): sc-28344. Western blot analysis of human recombinant Ob.



Ob (B-4): sc-28344. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing extracellular staining of connective tissue.

SELECT PRODUCT CITATIONS

1. Bressan, E., et al. 2019. Metal nanoparticles released from dental implant surfaces: potential contribution to chronic inflammation and peri-Implant bone loss. Materials 12 pii: E2036.

RESEARCH USE

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

CONJUGATES

See **Ob (F-3): sc-48408** for Ob antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.