SANTA CRUZ BIOTECHNOLOGY, INC.

Ob (H-146): sc-9014

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. The gene encoding Ob maps to human chromosome 7q32.1.

REFERENCES

1. Friedman, J.M., et al. 1991. Molecular mapping of the mouse Ob mutation. Genomics 11: 1054-1062.
2. Friedman, J.M., et al. 1992. Tackling a weighty problem. Cell 69: 217-220

CHROMOSOMAL LOCATION

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

SOURCE

Ob (H-146) is a rabbit polyclonal antibody raised against amino acids 22-167 of Ob of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ob (H-146) is recommended for detection of precursor and mature Ob of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), 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).

Ob (H-146) is also recommended for detection of precursor and mature Ob in additional species, including equine, bovine and porcine.

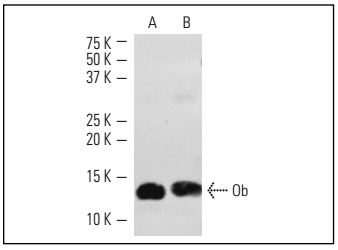
Suitable for use as control antibody for Ob siRNA (h): sc-37189, Ob siRNA (m): sc-37190, Ob shRNA Plasmid (h): sc-37189-SH, Ob shRNA Plasmid (m): sc-37190-SH, Ob shRNA (h) Lentiviral Particles: sc-37189-V and Ob shRNA (m) Lentiviral Particles: sc-37190-V.

Molecular Weight of Ob: 16 kDa.

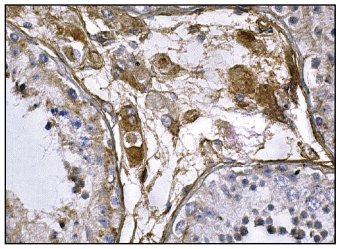
STORAGE

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

DATA



Ob (H-146): sc-9014. Western blot analysis of human (**A**) and mouse (**B**) recombinant Ob.



Ob (H-146): sc-9014. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic staining of Leydig cells.

SELECT PRODUCT CITATIONS

1. Motta, M., et al. 2004. Leptin and prolactin modulate the expression of SOCS-1 in association with interleukin-6 and tumor necrosis factor α in mammary cells: a role in differentiated secretory epithelium. Regul. Pept. 121: 163-170.
2. Lin, Y., et al. 2007. Expression and function of leptin and its receptor in mouse mammary gland. Sci. China, C, Life Sci. 50: 669-675.
3. Hamza, M.S., et al. 2009. *De novo* identification of PPARγ/RXR binding sites and direct targets during adipogenesis. PLoS ONE 4: e4907.
4. Uzelac, P.S., et al. 2010. Dysregulation of leptin and testosterone production and their receptor expression in the human placenta with gestational diabetes mellitus. Placenta 31: 581-588.
5. He, L., et al. 2010. Structural and functional studies of leptins from hibernating and non-hibernating bats. Gen. Comp. Endocrinol. 168: 29-35.
6. Unglaub, F., et al. 2011. Expression of leptin, leptin receptor, and connective tissue growth factor in degenerative disk lesions in the wrist. Arthroscopy 27: 755-760.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.