SANTA CRUZ BIOTECHNOLOGY, INC.

Ob-R (F-18): sc-33978

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 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 recently 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 Ob gene encodes the protein leptin. The leptin receptor, designated Ob-R, has been shown to be a single membrane-spanning receptor that most resembles the gp130 signal transducing component of the IL-6, G-CSF and LIF receptor. Ob-R mRNA is expressed in the choroid plexus and hypothalamus.

REFERENCES

1. Ingalls, A.M., et al. 1950. Obese, a new mutation in the house mouse. J. Hered. 41: 317-318.
2. Friedman, J.M., et al. 1991. Molecular mapping of the mouse Ob mutation. Genomics 11: 1054-1062.
3. Friedman, J.M., et al. 1992. Tackling a weighty problem. Cell 69: 217-220.
4. Rink, T.J. 1994. In search of a satiety factor. Nature 372: 406-407.
5. Zhang, Y., et al. 1994. Positional cloning of the mouse obese gene and its human homologue. Nature 372: 425-431.
6. Tartaglia, L.A., et al. 1995. Identification and expression cloning of a leptin receptor, Ob-R. Cell 83: 1263-1271.
7. Barinaga, M. 1996. Researchers nail down leptin receptor. Science 271: 913.
8. Chua, S.C., et al. 1996. Phenotypes of mouse diabetes and rat fatty due to mutations in the Ob (leptin) receptor. Science 271: 994-996.

CHROMOSOMAL LOCATION

Genetic locus: LEPR (human) mapping to 1p31.3.

SOURCE

Ob-R (F-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of Ob-R of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-33978 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ob-R (F-18) is recommended for detection of all Ob-R isoforms of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Ob-R (F-18) is also recommended for detection of all Ob-R isoforms in additional species, including equine.

Suitable for use as control antibody for Ob-R siRNA (h): sc-36115, Ob-R shRNA Plasmid (h): sc-36115-SH and Ob-R shRNA (h) Lentiviral Particles: sc-36115-V.

Molecular Weight of Ob-R short form: 100 kDa.

Molecular Weight of Ob-R long form: 125 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Fiorio, E., et al. 2008. Leptin/HER2 crosstalk in breast cancer: *in vitro* study and preliminary *in vivo* analysis. BMC Cancer 8: 305.

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.