

Ob-R (B-3): sc-8391

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.

CHROMOSOMAL LOCATION

Genetic locus: LEPR (human) mapping to 1p31.3; Lepr (mouse) mapping to 4 C6.

SOURCE

Ob-R (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 870-894 of short form Ob-R of mouse 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-R (B-3) is available conjugated to agarose (sc-8391 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8391 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8391 PE), fluorescein (sc-8391 FITC), Alexa Fluor® 488 (sc-8391 AF488), Alexa Fluor® 546 (sc-8391 AF546), Alexa Fluor® 594 (sc-8391 AF594) or Alexa Fluor® 647 (sc-8391 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8391 AF680) or Alexa Fluor® 790 (sc-8391 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8391 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

PROTOCOLS

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

APPLICATIONS

Ob-R (B-3) is recommended for detection of short and long forms of Ob-R 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-R (B-3) is also recommended for detection of short and long forms of Ob-R in additional species, including canine.

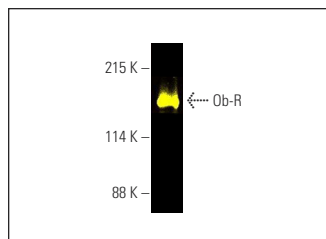
Suitable for use as control antibody for Ob-R siRNA (h): sc-36115, Ob-R siRNA (m): sc-36116, Ob-R shRNA Plasmid (h): sc-36115-SH, Ob-R shRNA Plasmid (m): sc-36116-SH, Ob-R shRNA (h) Lentiviral Particles: sc-36115-V and Ob-R shRNA (m) Lentiviral Particles: sc-36116-V.

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

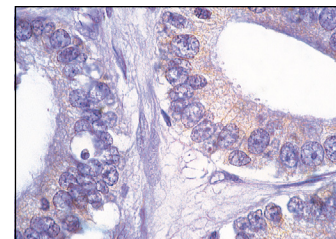
Molecular Weight of Ob-R long form: 125 kDa.

Positive Controls: human liver extract: sc-363766, rat brain extract: sc-2392 or KNRK whole cell lysate: sc-2214.

DATA



Ob-R (B-3) Alexa Fluor® 488: sc-8391 AF488. Direct fluorescent western blot analysis of Ob-R expression in human liver tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Ob-R (B-3): sc-8391. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon carcinoma showing membrane localization.

SELECT PRODUCT CITATIONS

- Frank, S., et al. 2000. Leptin enhances wound re-epithelialization and constitutes a direct function of leptin in skin repair. *J. Clin. Invest.* 106: 501-509.
- Panza, S., et al. 2019. Leptin receptor as a potential target to inhibit human testicular seminoma growth. *Am. J. Pathol.* 189: 687-698.
- Wolodko, K., et al. 2020. Leptin resistance in the ovary of obese mice is associated with profound changes in the transcriptome of cumulus cells. *Cell. Physiol. Biochem.* 54: 417-437.
- Chang, B., et al. 2021. Leptin and inflammatory factors play a synergistic role in the regulation of reproduction in male mice through hypothalamic kisspeptin-mediated energy balance. *Reprod. Biol. Endocrinol.* 19: 12.

RESEARCH USE

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