

Ob-R (H-300): sc-8325

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 (H-300) is a rabbit polyclonal antibody raised against amino acids 541-840 mapping within an internal domain of Ob-R 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-R (H-300) 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 (H-300) is also recommended for detection of short and long forms of Ob-R in additional species, including equine, canine, bovine and porcine.

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.

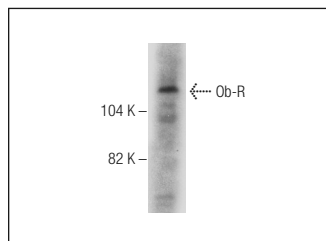
Molecular Weight of Ob-R long form: 125 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, rat brain extract: sc-2392 or COLO 320DM cell lysate: sc-2226.

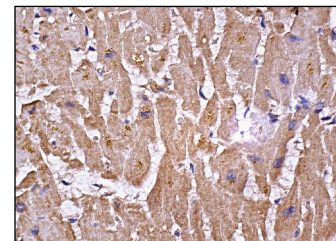
STORAGE

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

DATA



Ob-R (H-300): sc-8325. Western blot analysis of Ob-R expression in SH-SY5Y whole cell lysate.



Ob-R (H-300): sc-8325. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Kim, G.S., et al. 2003. Leptin induces apoptosis via ERK/cPLA₂/cytochrome c pathway in human bone marrow stromal cells. *J. Biol. Chem.* 278: 21920-21929.
- McGaffin, K.R., et al. 2009. Leptin signaling in the failing and mechanically unloaded human heart. *Circ. Heart Fail.* 2: 676-683.
- Hindlet, P., et al. 2009. Reduced intestinal absorption of dipeptides via PepT1 in mice with diet-induced obesity is associated with leptin receptor down-regulation. *J. Biol. Chem.* 284: 6801-6808.
- 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.
- Koda, M., et al. 2010. Relationships between hypoxia markers and the leptin system, estrogen receptors in human primary and metastatic breast cancer: effects of preoperative chemotherapy. *BMC Cancer* 10: 320.
- Cheng, S.P., et al. 2011. Leptin enhances migration of human papillary thyroid cancer cells through the PI3K/AKT and MEK/ERK signaling pathways. *Oncol. Rep.* 26: 1265-1271.
- Valle, A., et al. 2011. Chronic leptin treatment sensitizes MCF-7 breast cancer cells to estrogen. *Cell. Physiol. Biochem.* 28: 823-832.

RESEARCH USE

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



Try **Ob-R (B-3): sc-8391**, our highly recommended monoclonal alternative to Ob-R (H-300). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Ob-R (B-3): sc-8391**.