SANTA CRUZ BIOTECHNOLOGY, INC.

Ob (A-20): sc-842

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.

CHROMOSOMAL LOCATION

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

SOURCE

Ob (A-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Ob of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-842 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ob (A-20) 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 (A-20) is also recommended for detection of precursor and mature Ob in additional species, including equine, canine, bovine, porcine, avian and feline.

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.

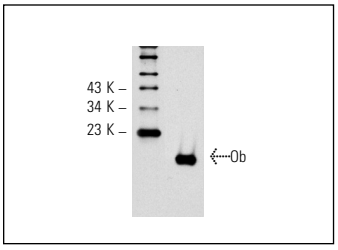
Molecular Weight of Ob: 16 kDa.

Positive Controls: JAR cell lysate: sc-2276.

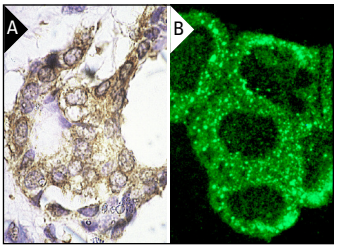
STORAGE

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

DATA



Ob (A-20): sc-842. Western blot analysis of human recombinant Ob protein (leptin).



Ob (A-20): sc-842. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma showing cytoplasmic localization of Ob protein (**A**). Immunofluorescence staining of methanol-fixed JAR cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Bado, A., et al. 1998. The stomach is the source of leptin. Nature 394: 790-793.
2. Bol, V.V., et al. 2009. Forced catch-up growth after fetal protein restriction alters the adipose tissue gene expression program leading to obesity in adult mice. Am. J. Physiol. Regul. Integr. Comp. Physiol. 297: R291-R299.
3. Farley, D.M., et al. 2010. Placental amino acid transport and placental leptin resistance in pregnancies complicated by maternal obesity. Placenta 31: 718-724.
4. Russo, F., et al. 2011. Immunohistochemical and immunochemical characterization of the distribution of leptin-like proteins in the gastroenteric tract of two teleosts *(Dicentrarchus labrax* and *Carassius auratus L.)* with different feeding habits. Microsc. Res. Tech. 74: 714-719.
5. Russo, F., et al. 2012. Expression and immunohistochemical detection of leptin-like peptide in the gastrointestinal tract of the South American sea lion *(Otaria flavescens)* and the bottlenose dolphin *(Tursiops truncatus).* Anat. Rec. 295: 1482-1493.
6. Ettore V., et al. 2012. Immunohistochemical and immunological detection of ghrelin and leptin in rainbow trout *Oncorhynchus* mykiss and murray cod *Maccullochella* peelii peelii as affected by different dietary fatty acids. Microsc. Res. Tech. 75: 771-780.

RESEARCH USE

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