ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Obese/leptin Receptor Peptides & Antibodies

□ **Cat #** OBR12-P	Mouse OBR control/blocking peptide # 2	**SIZE**: 100 ug
□ **Cat #** OBR12-S	Rabbit Anti-Mouse OBR12 antiserum # 2	**SIZE**: 100 ul
□ **Cat #** OBR12-A	Rabbit Anti-Mouse OBR12 IgG # 2, aff. pure	**SIZE**: 100 ug

Obesity, a common nutritional disorder, is associated with diabetes, hypertension, hyperlipidemia, cancer and many other health related problems. At least five genes, Obese (ob), diabetes (db), fat (fat), agouti yellow (Ay), and tubby (tub) have been linked to obesity. Obese gene encodes an adipocyte-tissue derived secreted protein Ob protein/Leptin (167 amino acid, ~16 kDa) that controls body weight homeostasis. Leptin mediates its effects via the Leptin receptor or Obese receptors (OBR or LR) that is expressed in several tissues including hypothalamus. The Ob-R has at least 6 alternatively spliced forms (**OBRa-f or LRa-f)** that contain a common extracellular domain. The OBRa represents the initially identified mouse Ob-R (short form, 894 AA). **OBRa, -c, -d, and –f** differ in sequence after Lys889 and have short (30-40 aa) cytoplasmic extension Mouse Ob-Rb (long form) displays ~78% homology to the human Ob-R (long form, 1165 AA). OBRb has ~300 aa intracellular tail. Expression of Ob-Rb and other forms have been detected in hypothalamus and other tissues. OBRe lacks the transmembrane domain. The soluble Ob-Re is found in adipose tissues, hypothalamus, heart, and testes. Ob-R is abnormally spliced in db/db mice (truncation of cytoplasmic domain) that are important for leptin signaling. Leptin is structurally related to cytokine family and it activates cytokine-like signal transduction by stimulating the JAK-STAT pathway via the OBRb. The absence of functional leptin in ob/ob and the long form OBRb in db/db mice due to abnormal splicing produces severe obesity. The nature of leptin resistance in other obesity models is not clear.

Sources of antigen and antibodies

Antigen	A 13 amino acid sequence (**designated OBR12-P, control peptide**) after the transmembrane domain and adjacent to the splicing junction (after lysine 889) of mouse **OBRb** (long form) conjugated to KLH
Ab Host/type	Rabbit, Polyclonal IgG, purified over antigen-agarose (Cat # OBR12-A) supplied in PBS+0.1% BSA+0.05% azide
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
□ 100ul □ □ solution □ lyophilized powder
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

Affinity pure IgG
□ 100 ug/100ul □ solution □ lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
□ 100 ug/100 ul □ solution □ lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Working antibody dilution (1:500-3K) should be optimized. Antibody dilution may be adjusted according to the sample composition, and technique employed (Western blotting, immunoprecipitations, histochemistry) and sensitivity of detection (colorimetric or Chemiluminescent substrates).

ELISA (1:10-50K; 10-100 ng of control peptide/well).

Specificity and crossreactivity

Mouse OBR12-P sequence is unique to the OBRb long form. It is not found in OBR isoforms a, and c-f. It is 100% conserved rat, 84% in pig, turkey, and chicken, 76% in sheep human, and monkey OBRb. OBR12-P has no significant homology to gp130. Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol see detailed protocol at the web site)..

General References: Tartaglia, LA (1995) Cell 83, 1263-1271; Chen, H (1995) Cell 84, 491-495; Lee, G-H, et al (1996) Nature 379, 632-6352; Cioffi JA et al (1996) Nature Med. 2, 585-589; Takya K et al (1996) BBRC 225, 75-83; Considine,R.V et al (1996) Diabetes 45, 992-994; Considine,R.V et al (1997) BBRC 233, 248-252

List of Publications using ADI OBR12 Antibodies-the antibodies have been referenced for us in Western blot and IHC in mouse, rat. Please see the publications list at:

http://www.4adi.com/objects/catalog/product/extras/Leptin_Receptor_Antibodies_Flr.pdf

This product is for In vitro research use only.

Related material available from ADI

Recombinant Leptin, Leptin, Adiponectin, Resistin ELIA kits

OBR12-S-A-P-Anti-Leptin-Obese-Receptors-IgG
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