

Product Specification Sheet

**Mouse Leptin Receptor (OBR/LEPR) Antibodies**

**Cat #** OBR19-M      **Rat** Monoclonal Anti-Mouse OBR (EC) protein, aff. Pure IgG      **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, mouse 1162 aa). OBRb has ~300 aa intracellular tail. Expression of Ob-Rb and other forms have been detected in hypothalamus and other tissues. OBRc 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**

<b>Antigen</b>	Recombinant Purified Mouse OBR EC domain 1-839 aa <b>control peptide</b> ).
<b>Epitope Location</b>	~unknown
<b>Ab Host/type</b>	Rat, monoclonal IgG2a, purified over antigen-agarose (Cat # OBR19-M) supplied in PBS (no additives)
<b>2-Ab</b>	Cat # 50320, goat anti-rat IgG-HRP conjugate (AP, biotin, FITC conjugates also available).

**Form & Storage of Antibodies/Peptide Control**

**Affinity pure IgG**

100 ug/100ul      50 ug/50 ul  
solution      lyophilized powder

Buffer: PBS, pH 7.5

**Reconstitute powder in PBS at 1 mg/ml.**

**Storage**

**Short-term:** unopened, undiluted liquid vials for less than a week at 4oC.

**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**

**Western:** Suggested working antibody dilution is 1-5 ug/ml. Actual antibody dilution of antibody may be adjusted according to the sample composition, and technique employed. Polyclonal antibody # OBR18-A and OBR20-A are better suited for Western.

**ELISA** (1-5 ug/ml) recommended as capture antibody.

**Specificity and crossreactivity**

OBR19-M antibody reacts with mouse OBR. It has minimal reactivity with human OBR. Antibody cross-reactivity in other species has not been studied.

**General References:** (1) 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; Ghilardi N et al (1996) PNAS 93, 6231-6235; Considine, R.V et al (1997) BBRC 233, 248-252; Igel M et al (1997) Endocrinol. 138, 4234-4239; Chua WK et al (1997) Genomics 45, 264-270; (2) Nilsson C et al (2001) Endocrinol. 142: 2622-2630

*This product is for In vitro research use only.*

**Related material available from ADI**

Recombinant Leptin, Anti-Leptin Receptor phopshorylated (Tyr985 and Tyr1138), AGRP, Tubby, UCPs, FABPs, HXKs, MCHR etc.

Mouse and Human Leptin ELISA kit, Resistin, Adiponectin ELISA

OBR19-M      41117A

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