

Product Specification Sheet

Mouse Leptin Receptor (OBR/LEPR) Antibodies

Cat # OBR20-A

Goat Anti-Mouse OBR protein IgG, aff. pure

SIZE: 100 ug

FORM: Soln

Lyophilized

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

Mouse OBRb (long form) is 1162 aa (1). **Mouse** OBR/leptin receptor was expressed in NSO cells, purified, and used as an antigen to produce antibodies in **goats**. Antibodies have been purified using Protein-A/G column affinity chromatography.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution	50 ug/50 ul lyophilized powder
Buffer: PBS, pH 7.5, 0.1% BSA, 0.05% sodium azide	
Reconstitute 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. The antibody detects the chimeric protein containing the OBR C-terminal region. It detects a major band of ~150 Kda in the brain. Additional bands 30-50 kDa and 120 kDa may be visible in some cell lines.

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

Specificity and crossreactivity

Mouse OBR20-A antibody reacts with mouse and rat OBR. It has minimal crossreactivity with human OBR. We recommend the use of cat # OBR21-A for the detection of human OBR that is made to the human OBR protein. Antibody cross-reactivity in various 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; Taky 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.

Human and mouse Leptin ELISA kit,

OBR20-A	41104A
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