

Product Specification Sheet

OB-RGRP Antibodies

Cat # OBRGRP11-P	Human OBR control/blocking peptide	SIZE: 100 ug
Cat # OBRGRP11-S	Rabbit Anti-Human OBRGRP antiserum	SIZE: 100 ul
Cat # OBRGRP11-A	Rabbit Anti-Human OBRGRP IgG, 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. 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.

More recently, another variant of OBR, termed **OB-RGRP** (obese receptor gene related protein), has been identified that is distinct from the leptin receptor itself. OB-RGRP transcript contains the first two OBR gene 5'-untranslated exons, but then is alternatively spliced to two either leptin receptor or 131 aa protein OB-RGRP. The OB-RGRP is highly conserved in mouse, rat, human, yeast and C. elegans. OPB-RGRP is highly expressed in the hypothalamic regions that express the OBR mRNA. The OBR/B219, but not the OB-RGRP, is up-regulated in hypothalamus of ob/ob mice. OB-RGRP mRNA is also detected in heart, placenta, lung, liver, skeletal muscle, kidney, and pancreas. A new full-length cDNA encoding a new 131 aa protein, leptin receptor overlapping transcript-like 1 gene (**LEPROTL1**), that is highly homologous with OB-RGRP (~70% identity with OB-RGRP). LEPROTL1 is also widely expressed and has a similar JAK binding site (Pro46-Ile-Pro48) that is conserved in homologous proteins. LEPROTL1 protein is predicted to display 3 TM domains with an extracellular N-terminus and intracellular C-terminus.

Source of Antigen and Antibodies

Antigen	1-aa peptide of Human OBR ; Designated (designated OBRGRP11-P, control peptide) .conjugated to KLH;Epitope location within the first putative intracellular domain of human OB-RGRP
Ab Host/type	Rabbit, polyclonal Aff pure IgG1 (cat #OBRGRP11-A) purified over the antigen column
2-ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available
-ve control	# 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 in Buffer: 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 20°C and powder at 4°C or -20°C..

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

Stability: 6-12 months at -20°C or below.

Shipping: 4°C for solutions and room temp for powder

Recommended Usage

Western: 1:1000 dilution of antiserum or 1-10 ug/ml of aff pure IgG. Optimal dilutions must be optimized.

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

Specificity and crossreactivity

Human OBRGRP11-P sequence is 100% conserved in mouse, rat, and human OB-RGRP. It is only 53% conserved in human LEPROTL1. 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

General References: Baillieu B et al (1997) Nucl. Acid Res. 25, 2752-2758; Mercer JG et al (2000) J. Neuroendocrinol. 12, 649-655; Huang Y et al (2001) BBA 1517, 327-331;

This product is for In vitro research use only.

Related material available from ADI

Recombinant Leptin, Anti-Leptin protein, Agouti, AGRP, Tubby, UCPs, FABPs, Hexokinases, MCHR etc.
Leptin Receptor Tyr985 and Tyr1138 antibodies

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