

Product Specification Sheet

Melanocortin Receptor 4 (MC4-R) Antibodies

Cat. # MCR42-S	Rabbit Anti-Human MC4-R Antiserum # 2	SIZE: 100 ul
Cat. # MCR42-A	Rabbit Anti- Human MC4-R Ig G# 2 (aff. pure)	SIZE: 100 ug
Cat. # MCR42-P	Human MC4-R Control peptide	SIZE: 100 ug

Melanocortins are regulatory peptides formed by post-translational processing of pro-opiomelanocortin. Melanocortin peptides have been suggested to perform a variety of physiological roles ranging from control of behavior, memory, neurotrophic properties, antipyretic and modulation of immune system, etc. Their binding sites have been found distributed in tissues ranging from lachrymal and submandibular glands, pancreas, adipose tissue, bladder, duodenum, spleen, brain, gonadal tissues and malignant melanoma tumors. Five melanocortin receptors (MC-R) have been characterized to date. These include melanocyte-specific receptor (MSH or MC1-R), corticoadrenal-specific ACTH receptor (MC2-R), melancortin-3 (MC3-R), melanocortin-4 (MC4-R) and melanocortin-5 receptor (MC5-R). MC3-R and MC4-R are distributed in brain whereas MC5-R has a broad distribution.

Melanocyte Stimulating Hormone Receptor (MSH-R), also called Melanotropin Receptor, or Melanocortin-1 Receptor (MC1-R), is a 315 amino acid transmembrane protein belonging to the family of G-Protein coupled receptors. It is a receptor for MSH (a,b,g) and ACTH. Its activity is mediated by G-proteins, which activate adenylate cyclase. It is found in Melanocytes and corticoadrenal tissue as well as various tissues like adrenal gland, leukocytes, lung, lymph node, ovary, testis, pituitary, placenta, spleen and uterus. Melanocortin-2 receptor (MC2-R) also called Adrenocorticotrophic hormone receptor (ACTH-R) is a 297 amino acid transmembrane protein found in melanocytes and the corticoadrenal tissue. It mediates the corticotrophic effect of ACTH. Melanocortin-3 receptor (MC3-R) is expressed in brain. In humans it is a 360 AA protein whereas in mice and rats its 323 AA. MC4-R is a 332 amino acid transmembrane protein and is expressed in brain, placental and gut tissues. MC5-R is a 325 amino acid transmembrane protein expressed in the adrenals, stomach, lung and spleen and very low levels in the brain. It is also expressed in the three layers of adrenal cortex, predominantly in the aldosterone-producing zona glomerulosa cells.

Source of Antigen and Antibodies

Antigen	14aa peptide of Human MC4-R; (Gene Accession #P32245) Designated (MCR42-P or control peptide). conjugated to KLH
Location	~C-terminal, Cytoplasmic
Ab Host/type	Rabbit, polyclonal; Unpurified antiserum (cat #MCR42-S) Aff pure IgG (cat #MCR42-A)
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (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, undiluted)

100 ul/vial solution	50 ul/vial lyophilized powder
contains 0.05% sodium azide	

Reconstitute powder in the original vol. of water

Affinity pure IgG

100 ug/100ul solution	50 ug/50 ul lyophilized powder
Buffer: 100 mM Tris, pH 7.5, 0.2% BSA contains 0.05% sodium azide	
Reconstitute powder in the original vol. of water	

Control/blocking peptide

100 ug/100 ul solution	50 ug/50 ul lyophilized powder
Buffer: PBS, pH 7.5 and 0.05% sodium azide	
Reconstitute powder in the original vol. of water	

Storage

Short-term: unopened, undiluted 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 Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

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

Histochemistry & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 2-20 ug/ml.

Specificity & Cross-reactivity

The 14 AA human MCR42 immunogenic peptide sequence is 100% identical in monkey, pig, & bovine 84% with mouse, and 69% homologous with rat MC4-R. No significant sequence homology of MCR42 is seen with other melanocortin receptors. ADI has another antibody that is made to rat MC4-R sequence (MCR41-S). Actual crossreactivity of antibodies in all species is not established. 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 at: www.4adi.com/data/abblock.html).

General References:

Alvaro JD et al (1996) Mol Pharmacol. 50, 583; Gantz I et al (1993) JBC 268, 15174; Mountjoy KJ et al (1994) Mol. Endocrinol. 8, 1298

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

MCR42-S-A-P

rev 40203S