

PRODUCT INFORMATION



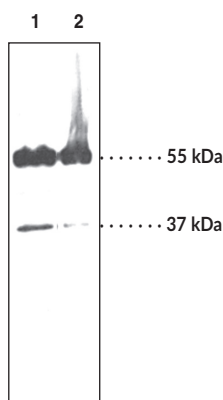
Melanocortin-4 Receptor Polyclonal Antibody

Item No. 10006355

Overview and Properties

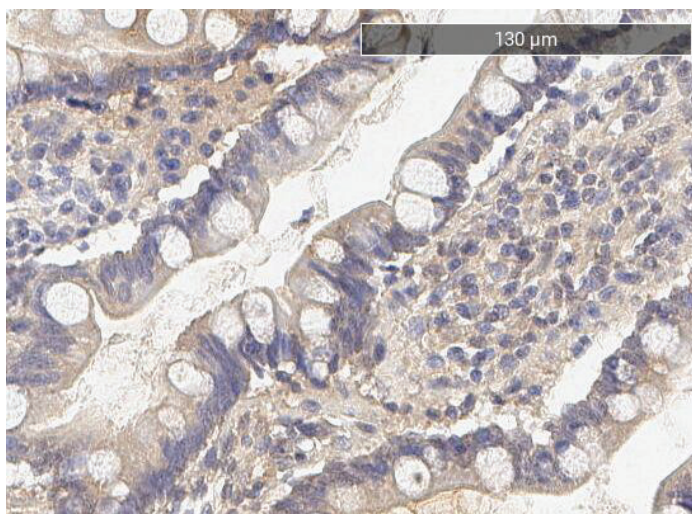
| | |
|----------------------------|---|
| Contents: | This vial contains 500 µl of peptide affinity-purified antibody. |
| Synonym: | MC4R |
| Immunogen: | Peptide from the N-terminal region of mouse protein MC4R |
| Species Reactivity: | (+) Human, mouse, and rat; other species not tested |
| Uniprot No.: | P56450 |
| Form: | Liquid |
| Storage: | -20°C (as supplied) |
| Stability: | ≥1 year |
| Storage Buffer: | PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide |
| Host: | Rabbit |
| Applications: | Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC (formalin-fixed paraffin-embedded sections) is 1:120 and 1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

Images



Lane 1: Human cerebella cortex pellet (30 µg)
Lane 2: Human hippocampus homogenate (30 µg)

Representative gel image shown



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) mouse small intestine tissue after heat-induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Melanocortin-4 Receptor Polyclonal Antibody (Item No. 10006355) at a 1:120 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Melanocortins are known to exert a broad array of physiological actions including “melanogenesis, steroidogenesis, sexual function and inflammation, as well as appetite regulation and energy homeostasis”.¹ These actions are mediated (differentially or concurrently) in part by a family of G-protein coupled receptors, the melanocortin receptors 1-5 (MC1R-MC5R). Melanocortin-4 receptor (MC4R) was first cloned in 1993 with transcripts expressed primarily in the brain.² Genetic studies of mice and humans have established a critical role of MC4R in appetite regulation.³ Heterozygous mutations in MC4R account for 1-6% of severe cases of human obesity. Thus, MC4R has been a prime target for therapeutic intervention in obesity.⁴

All known mammalian MC4Rs are 332 amino acids in length with an estimated molecular weight of 37 kDa. The protein is heavily glycosylated and appears at multiple positions on SDS-PAGE.⁵ Cayman’s MC4R polyclonal antibody mainly detects an unglycosylated protein at 37 kDa and a glycosylated protein at 55 kDa.

References

1. Yeo, G.S.H. and Siddle, K. Attractin’ more attention-new pieces in the obesity puzzle? *Biochem J.* **376**, e7-e8 (2003).
2. Gantz, I., Miwa, H., Konda, Y., *et al.* Molecular cloning, expression, and gene localization of a fourth melanocortin receptor. *J. Biol. Chem.* **268(20)**, 15174-15179 (1993).
3. Fan, W., Boston, B.A., Kesterson, R.A., *et al.* Role of melanocortinergic neurons in feeding and the agouti obesity syndrome. *Nature* **385**, 165-168 (1997).
4. Crowley, V.E.F., Yeo, G.S.H., and O’Rahilly, S. Obesity therapy: altering the energy intake-and-expenditure balance sheet. *Nature Reviews Drug Discover* **1**, 276-286 (2002).
5. Ho, G. and MacKenzie, R.G. Functional characterization of mutations in melanocortin-4 receptor associated with human obesity. *J. Biol. Chem.* **274(50)**, 35816-35822 (1999).

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