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## Melanocortin (MC) Receptor antibodies

### Anti-Melanocortin Type 3 Receptor (MC3R) Antibodies (MC3R-301AP, MC3-312AP and MC3-321AP)

The Proopiomelanocortin (POMC) is expressed in the arcuate nucleus of the hypothalamus (ARC) and the commissural nucleus of the solitary tract (cNTS) is post-translational processed to produce two melanocortin receptor ligands, alpha- and gamma-melanocyte-stimulating hormone (MSH). These endogenous peptides have long been reported to possess anti-inflammatory effects in many experimental models of acute and chronic inflammation, including experimental bowel disease, allergy, and chronic (mycobacterium-induced arthritis) and systemic inflammation (endotoxemia) (1). Melanocortins are ligands for a subgroup of GPCRs positively coupled to Adenylate cyclases, termed as melanocortin receptor (MC1-R, MC2R, MC3R, MC4R and MC5R). These receptors are widely expressed at varied density throughout the body. Specific physiological actions have been implicated to specific MC receptors such as skin pigmentation to MC1C, stimulation of adrenal steroidogenesis to MC2R, obesity related effects to MC4R and anti-inflammatory effects to MC3R (2)

Two melanocortin receptors (MC3R, MC4R) are expressed in brain regions receiving projections of POMC fibers, most of which also receive projections from a population of arcuate neurons that co-express neuropeptide Y (NPY) and the MC3R/MC4R antagonist agouti-related peptide (AgRP). Recent data suggest that MC3R knock out mice exhibit reduced linear growth and lean mass and are hyperleptinemic and hyperinsulinemic. The MC3R knock out mice did not show type 2 diabetes contract to a common finding in MC4R knock out mice (3).

The Anti-MC3R-selective antibodies were generated against 3 unique epitopes from the MC3R receptor sequence that are conserved in several species. The peptides were post-synthetically modified to enhance antigenicity and conjugation to a carrier protein. The N-terminal, mid-region and C-terminal epitopes are unique to MC3R receptor only. These antibodies do not cross react with other MC receptors. The polyclonal antibodies strongly labels a 55-60 kDa protein in PC-MC3R samples. Anti-MC3R-selective antibodies are also available in affinity-purified form for Immunoprecipitation, immunohistochemistry and Western blotting analyses. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at a nominal extra charge. *FabGennix, Inc.*, will also provide Western blot positive controls for most of these antibodies in ready-to-use buffer for easy identification of respective proteins. Limited quantities of antigenic peptides are also available. Please enquire for their availability before ordering. *FabGennix Inc.* also provides antibodies against several other GPCRs, for a complete listing please visit GPCR listing under products at [www.fabgennix.com](http://www.fabgennix.com). *FabGennix Inc.*, employs cyclic peptide methodology for generating antibodies, which results in higher titer and specificity (4).

Catalog #	Host Species	Nature	Cross reactivity	Quantity	price
MC3R-301AP	Rabbit	Affinity purified MC3R antibodies (N-terminal)	R, M, H	100 ml	235
MC3R-312AP	Rabbit	Affinity purified MC3R antibodies (mid-region)	R, M, H	100ug	235
MC3R-321AP	N/A	Affinity purified MC3R antibodies (C-terminal)	R, M, H	500ug	235
P-MC3R301	n/a	Antigenic blocking peptide	n/a	250 ug	115
P-MC3R-312	n/a	Antigenic blocking peptide	n/a	250 ug	115
PMC3R-322	n/a	Antigenic blocking peptide	n/a	250 ug	115
PC-MC3R	n/a	Western blot positive control	Rat	5 appl	145

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; \* For 5 applications

**Immunogen:** Synthetic peptides from N-terminal, mid-region and C-terminal epitopes from MC3R protein.  
**Concentration:** MC3R-301AP, MC3R-312AP, MC3R-321AP, IgG concentration 0.5-0.6 mg/ml in antibody stabilization buffer.  
**Applications:** Antibody MC3R-301AP, MC3R-312AP and MC3R-321AP antibodies are ideal for WB. IMM, IHC and other applications have not been standardized. The dilutions for this antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB: > 1:500; IMM & i.p pull-down assays: n.d  
**Reactivity:** These antibodies detect a diffuse band at 55kDa MC3R protein in PC-MC3R samples (Catalog # PC-MC3R). The antibody does not cross reacts with any other MC receptors.  
**Protocols:** Standard protocol for various applications (WB, IMM, IHC) of this antibody is provided with the product specification sheet, however, *FabGennix Inc.* strongly recommends investigators to optimize conditions for its use.  
**Form/Storage:** The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide as preservative. The affinity-purified antibodies are isolated on immobilized antigen-affinity based chromatography. For long-term storage of antibodies, store at -20oC. *FabGennix Inc.* does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DiluOBuffer). Working solutions of antibodies in DiluOBuffer should be filtered through 0.45u filter after every use for long-term storage.

#### References:

1. Butler AA, Cone RD. Ann N Y Acad Sci. 2003 Jun;994:240-5. .).
2. Wikberg, J. E. S., R. Muceniece, I. Mandrika, P. Prusis, J. Lindblom, C. Post, A. Skottner. 2000. Pharmacol. Res. 42:393.
3. Stephen J. et. al., The Journal of Immunology, 2003, 170: 3323-3330.
4. Farooqui, S. M., Brock. W. J., A. Hamdi., Prasad. C. (1991) J. Neurochem. 57, 1363-1369.

\* For users who may require large amounts of EP3-100P or EP3-101AP, please enquire about bulk material discounts.

This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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