OPRM1 Antibody

PRODUCT OVERVIEW

Product Name	OPRM1, Antibody
Full Product Name	OPRM1 Antibody
Product Gene Name	anti-OPRM1 antibody
Product Synonym Names	MOR; MOR1; Mu-type opioid receptor; MUOR1; Opioid receptor B; OPRM; OPRM1; ROR-B
Species Reactivity	Human
Form/Format	In phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	Immunogen affinity purified
Specificity	OPRM1 Antibody detects endogenous levels of total OPRM1
Preparation and Storage	Store at-20 degree C for 1 year
Molecular Weight	48 KD
OMIM	600018
3D Structure	ModBase 3D Structure for P35372
Immunogen	A synthesized peptide
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-OPRM1 antibody	Western Blot (WB), Immunohistochemistry (IHC)
Application Notes for anti-OPRM1 antibody	WB: 1:500~1:1000 IHC: 1:50~1:200
Related Product Information for anti-OPRM1 antibody	MBS8515747 is an antibody targeting OPRM1. Also known as OPRM1 Antibody. Reactive in Human.
Other Notes	Small volumes of anti-OPRM1 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for OPRM1. It may not necessarily be applicable to this product.

NCBI GI #	117940060
NCBI GeneID	4988
NCBI Accession #	NP_000905.3
UniProt Primary Accession #	P35372
UniProt Secondary Accession #	Q12930; Q4VWM1; Q4VWM2; B0FXJ1; B2R9S7; B8Q1L7; B8Q1L8; B8Q1L9; E7EWZ3; G8XRH6; G8XRH8
UniProt Related Accession #	P35372
GenBank Nucleotide #	NM_000914.4
NCBI Official Full Name	mu-type opioid receptor isoform MOR-1

NCBI Official Synonym Full Names	opioid receptor mu 1
NCBI Official Symbol	OPRM1
NCBI Official Synonym Symbols	MOP; MOR; LMOR; MOR1; OPRM; M-OR-1
UniProt Protein Name	Mu-type opioid receptor
UniProt Synonym Protein Names	Mu opiate receptor; Mu opioid receptor; MOP; hMOP
Protein Family	Mu-type opioid receptor
UniProt Gene Name	OPRM1
UniProt Synonym Gene Names	MOR1; M-OR-1; MOR-1; MOP; hMOP
NCBI Protein Information	mu-type opioid receptor
NCBI Summary for OPRM1	This gene encodes one of at least three opioid receptors in humans; the mu opioid receptor (MOR). The MOR is the principal target of endogenous opioid peptides and opioid analgesic agents such as beta-endorphin and enkephalins. The MOR also has an important role in dependence to other drugs of abuse, such as nicotine, cocaine, and alcohol via its modulation of the dopamine system. The NM_001008503.2:c.118A>G allele has been associated with opioid and alcohol addiction and variations in pain sensitivity but evidence for it having a causal role is conflicting. Multiple transcript variants encoding different isoforms have been found for this gene. Though the canonical MOR belongs to the superfamily of 7-transmembrane-spanning G-protein-coupled receptors some isoforms of this gene have only 6 transmembrane domains. [provided by RefSeq, Oct 2013]
UniProt Comments for OPRM1	Receptor for endogenous opioids such as beta-endorphin and endomorphin. Receptor for natural and synthetic opioids including morphine, heroin, DAMGO, fentanyl, etorphine, buprenorphin and methadone (PubMed:7905839, PubMed:7957926, PubMed:7891175, PubMed:12589820, PubMed:9689128). Agonist binding to the receptor induces coupling to an inactive GDP-bound heterotrimeric G-protein complex and subsequent exchange of GDP for GTP in the G-protein alpha subunit leading to dissociation of the G-protein complex with the free GTP-bound G-protein alpha and the G-protein beta-gamma dimer activating downstream cellular effectors (PubMed:7905839). The agonist- and cell type-specific activity is predominantly coupled to pertussis toxin-sensitive G(i) and G(o) G alpha proteins, GNAI1, GNAI2, GNAI3 and GNAO1 isoforms Alpha-1 and Alpha-2, and to a lesser extent to pertussis toxin-insensitive G alpha proteins GNAZ and GNA15 (PubMed:12068084). They mediate an array of downstream cellular responses, including inhibition of adenylate cyclase activity and both N-type and L-type calcium channels, activation of inward rectifying potassium channels, mitogen-activated protein kinase (MAPK), phospholipase C (PLC), phosphoinositide/protein kinase (PKC), phosphoinositide 3-kinase (PI3K) and regulation of NF-kappa-B. Also couples to adenylate cyclase stimulatory G alpha proteins. The selective temporal coupling to G-proteins and subsequent signaling can be regulated by RGSZ proteins, such as RGS9, RGS17 and RGS4. Phosphorylation by members of the GPRK subfamily of Ser/Thr protein kinases and association with beta-arrestins is involved in short-term receptor desensitization. Beta-arrestins associate with the GPRK-phosphorylated receptor and uncouple it from the G-protein thus terminating signal transduction. The phosphorylated receptor is internalized through endocytosis via clathrin-coated pits which involves beta-arrestins. The activation of the ERK pathway occurs either in a G-protein-dependent or a beta-arrestin-dependent manner and is regulated by agonist-specific receptor phosphorylation. Acts as a class A G-protein coupled receptor (GPCR) which dissociates from beta-arrestin at or near the plasma membrane and undergoes rapid recycling. Receptor down-regulation pathways are varying with the agonist and occur dependent or independent of G-protein coupling. Endogenous ligands induce rapid desensitization, endocytosis and recycling whereas morphine induces only low desensitization and endocytosis. Heterooligomerization with other GPCRs can modulate agonist binding, signaling and trafficking properties. Involved in neurogenesis. Isoform 12 couples to GNAS and is proposed to be involved in excitatory effects (PubMed:20525224). Isoform 16 and isoform 17 do not bind agonists but may act through oligomerization with binding-competent OPRM1 isoforms and reduce their ligand binding activity (PubMed:16580639).
Research Articles on OPRM1	**1.** Study demonstrated in a cohort of 84 cancer patients that high-dose opioid use correlates with OPRM1 hypermethylation in peripheral leukocytes; and showed that targeted re-expression of mu-opioid receptor on cancer cells inhibits mechanical and thermal hypersensitivity, and prevents opioid tolerance, in a mouse cancer pain model. Epigenetic regulation of OPRM1 contributes to opioid tolerance in cancer patients.
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