Recombinant Human OPRM1 Protein, MYC/DDK-tagged

Cat. No. OPRM1-295H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human OPRM1 protein, fused to MYC/DDK tag at C-terminus, was expressed in HEK293.
Species	Human
Source	HEK293
Description	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. 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. 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. 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,

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	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 [UniProtKB/Swiss-Prot Function]
Form	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10 % glycerol.
Molecular Mass	44.6 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Concentration	>50 ug/mL as determined by microplate BCA method

GENE INFORMATION

Gene Name	opioid receptor mu 1 [Homo sapiens]
Official Symbol	OPRM1p
Synonyms	LMOR; M-OR-1; MOP; MOR; MOR1; OPRM
Gene ID	4988
mRNA Refseq	NM_000914.3
Protein Refseq	NP_000905.3

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MIM	600018
UniProt ID	P35372

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