Datasheet for ABIN7554846

# Mu Opioid Receptor 1 Protein (AA 1-400) (His tag)

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## Overview

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| Quantity: | 1 mg |
| Target: | Mu Opioid Receptor 1 (OPRM1) |
| Protein Characteristics: | AA 1-400 |
| Origin: | Human |
| Source: | HEK-293 Cells |
| Protein Type: | Recombinant |
| Purification tag / Conjugate: | This Mu Opioid Receptor 1 protein is labelled with His tag. |
| Application: | Western Blotting (WB), SDS-PAGE (SDS) |

## Product Details

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| Purpose: | Custom-made recombinat OPRM1 Protein expressed in mammalien cells. |
| Sequence: | MDSSAAPTNA SNCTDALAYS SCSPAPSPGS WVNLSHLDGN LSDPCGPNRT DLGGRDSLCP PTGSPSMITA ITIMALYSIV CVVGLFGNFL VMYVIVRYTK MKTATNIYIF NLALADALAT STLPFQSVNY LMGTWPFGTI LCKIVISIDY YNMFTSIFTL CTMSVDRYIA VCHPVKALDF RTPRNAKIIN VCNWILSSAI GLPVMFMATT KYRQGSIDCT LTFSHPTWYW ENLLKICVFI FAFIMPVLII TVCYGLMILR LKSVRMLSGS KEKDRNLRRI TRMVLVVVAV FIVCWTPIHI YVIIKALVTI PETTFQTVSW HFCIALGYTN SCLNPVLYAF LDENFKRCFR EFCIPTSSNI EQQNSTRIRQ NTRDHPSTAN TVDRTNHQLE NLEAETAPLP **Sequence without tag. The proposed Purification-Tag is based on experiences with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.** |
| Characteristics: | Key Benefits: |

## Product Details

- Made to order protein - from design to production - by highly experienced protein experts.
- Protein expressed in mammalien cells and purified in one-step affinity chromatography
- The optimized expression system ensures reliability for intracellular, secreted and transmembrane proteins.
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a made-to-order protein and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein.

If you are not interested in a full length protein, please contact us for individual protein fragments.

The big advantage of ordering our made-to-order proteins in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

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| Purity: | > 90 % as determined by Bis-Tris Page, Western Blot |
| Grade: | custom-made |

## Target Details

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| Target: | Mu Opioid Receptor 1 (OPRM1) |
| Alternative Name: | OPRM1 (OPRM1 Products) |
| Background: | Mu-type opioid receptor (M-OR-1) (MOR-1) (Mu opiate receptor) (Mu opioid receptor) (MOP) (hMOP),FUNCTION: Receptor for endogenous opioids such as beta-endorphin and endomorphin (PubMed:12589820, PubMed:7891175, PubMed:7905839, PubMed:10529478, PubMed:7957926, PubMed:9689128). Receptor for natural and synthetic opioids including morphine, heroin, DAMGO, fentanyl, etorphine, buprenorphin and methadone (PubMed:12589820, PubMed:7891175, PubMed:7905839, PubMed:7957926, PubMed:10529478, PubMed:9689128, PubMed:10836142, PubMed:19300905). Also activated by enkephalin peptides, such as Met-enkephalin or Met-enkephalin-Arg-Phe, with higher affinity for Met-enkephalin-Arg-Phe (By similarity). 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, |

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| | 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 (By similarity). Also couples to adenylate cyclase stimulatory G alpha proteins (By similarity). The selective temporal coupling to G-proteins and subsequent signaling can be regulated by RGSZ proteins, such as RGS9, RGS17 and RGS4 (By similarity). Phosphorylation by members of the GPRK subfamily of Ser/Thr protein kinases and association with beta-arrestins is involved in short-term receptor desensitization (By similarity). Beta-arrestins associate with the GPRK-phosphorylated receptor and uncouple it from the G-protein thus terminating signal transduction (By similarity). The phosphorylated receptor is internalized through endocytosis via clathrin-coated pits which involves beta-arrestins (By similarity). 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 (By similarity). 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 (By similarity). Receptor down-regulation pathways are varying with the agonist and occur dependent or independent of G-protein coupling (By similarity). Endogenous ligands induce rapid desensitization, endocytosis and recycling (By similarity). Heterooligomerization with other GPCRs can modulate agonist binding, signaling and trafficking properties (By similarity). {ECO:0000250\|UniProtKB:P33535, ECO:0000269\|PubMed:10529478, ECO:0000269\|PubMed:12068084, ECO:0000269\|PubMed:12589820, ECO:0000269\|PubMed:7891175, ECO:0000269\|PubMed:7905839, ECO:0000269\|PubMed:7957926, ECO:0000269\|PubMed:9689128, ECO:0000303\|PubMed:10836142, ECO:0000303\|PubMed:19300905}., FUNCTION: [Isoform 12]: Couples to GNAS and is proposed to be involved in excitatory effects. {ECO:0000269\|PubMed:20525224}., FUNCTION: [Isoform 16]: Does not bind agonists but may act through oligomerization with binding-competent OPRM1 isoforms and reduce their ligand binding activity. {ECO:0000269\|PubMed:16580639}., FUNCTION: [Isoform 17]: Does not bind agonists but may act through oligomerization with binding-competent OPRM1 isoforms and reduce their ligand binding activity. {ECO:0000269\|PubMed:16580639}. |
| Molecular Weight: | 44.8 kDa |
| UniProt: | P35372 |

## Target Details

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| Pathways: | cAMP Metabolic Process, Synaptic Membrane |

## Application Details

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| Application Notes: | In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though. |
| Restrictions: | For Research Use only |

## Handling

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| Format: | Liquid |
| Buffer: | The buffer composition is at the discretion of the manufacturer. |
| Handling Advice: | Avoid repeated freeze-thaw cycles. |
| Storage: | -80 °C |
| Storage Comment: | Store at -80°C. |
| Expiry Date: | 12 months |

 