Datasheet for ABIN3134040

Mu Opioid Receptor 1 Protein (AA 1-398) (Strep Tag)

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Overview

Quantity:	1 mg
Target:	Mu Opioid Receptor 1 (OPRM1)
Protein Characteristics:	AA 1-398
Origin:	Mouse
Source:	Tobacco (Nicotiana tabacum)
Protein Type:	Recombinant
Purification tag / Conjugate:	This Mu Opioid Receptor 1 protein is labelled with Strep Tag.
Application:	ELISA, Western Blotting (WB), SDS-PAGE (SDS)

Product Details

Sequence:	MDSSAGPGNI SDCSDPLAPA SCSPAPGSWL NLSHVDGNQS DPCGPNRTGL GGSHSLCPQT GSPSMVTAIT IMALYSIVCV VGLFGNFLVM YVIVRYTKMK TATNIYIFNL ALADALATST LPFQSVNYLM GTWPFGNILC KIVISIDYYN MFTSIFTLCT MSVDRYIAVC HPVKALDFRT PRNAKIVNVC NWILSSAIGL PVMFMATTKY RQGSIDCTLT FSHPTWYWEN LLKICVFIFA FIMPVLIITV CYGLMILRLK SVRMLSGSKE KDRNLRRITR MVLVVVAVFI VCWTPIHIYV IIKALITIPE TTFQTVSWHF CIALGYTNSC LNPVLYAFLD ENFKRCFREF CIPTSSTIEQ QNSARIRQNT REHPSTANTV DRTNHQLENL EAETAPLP **Sequence without tag. The proposed Strep-Tag is based on experience s 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:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified by multi-step, protein-specific process to ensure correct folding and modification.
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- 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 will ensure that you receive a correctly folded protein.

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.

Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured in several dilutions and is measured against its specific reference buffer.
- We use the Expasy's protparam tool to determine the absorption coefficient of each protein.

Purification:	Two step purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®): 1. In a first purification step, the protein is purified from the cleared cell lysate using StrepTag capture material. Eluate fractions are analyzed by SDS-PAGE. 2. Protein containing fractions of the best purification are subjected to second purification step through size exclusion chromatography. Eluate fractions are analyzed by SDS-PAGE and Western blot.

Product Details

Purity:	≥ 80 % as determined by SDS PAGE, Size Exclusion Chromatography and Western Blot.
Endotoxin Level:	Low Endotoxin less than 1 EU/mg (< 0.1 ng/mg)

Target Details

Target:	Mu Opioid Receptor 1 (OPRM1)
Alternative Name:	Oprm1 (OPRM1 Products)
Background:	Mu-type opioid receptor (M-OR-1) (MOR-1),FUNCTION: Receptor for endogenous opioids such as beta-endorphin and endomorphin (PubMed:21422164, PubMed:22437502, PubMed:10842167, PubMed:16682964, PubMed:26245379, PubMed:7797593, PubMed:9037090). Receptor for natural and synthetic opioids including morphine, heroin, DAMGO, fentanyl, etorphine, buprenorphin and methadone (PubMed:16682964, PubMed:7797593, PubMed:9037090). Also activated by enkephalin peptides, such as Met-enkephalin or Met-enkephalin-Arg-Phe, with higher affinity for Met-enkephalin-Arg-Phe (PubMed:6933569, PubMed:35201898). 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:10842167, PubMed:21422164, PubMed:22437502). 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:9767386, PubMed:26245379). 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 (PubMed:15827571, PubMed:17725581). 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 (PubMed:12642578). The activation of the ERK pathway occurs either in

Target Details

	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. 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:10842167, ECO:0000269|PubMed:12642578, ECO:0000269|PubMed:15827571, ECO:0000269|PubMed:16682964, ECO:0000269|PubMed:17725581, ECO:0000269|PubMed:21422164, ECO:0000269|PubMed:22437502, ECO:0000269|PubMed:26245379, ECO:0000269|PubMed:35201898, ECO:0000269|PubMed:6933569, ECO:0000269|PubMed:7797593, ECO:0000269|PubMed:9037090, ECO:0000269|PubMed:9767386}., FUNCTION: [Isoform 9]: Isoform 9 is involved in morphine-induced scratching and seems to cross-activate GRPR in response to morphine. {ECO:0000269|PubMed:22000021}.
Molecular Weight:	44.4 kDa
UniProt:	P42866
Pathways:	cAMP Metabolic Process, Synaptic Membrane

Application Details

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.
Comment:	ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from Nicotiana tabacum c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications. During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

Application Details

Restrictions:	For Research Use only

Handling

Format:	Liquid
Buffer:	The buffer composition is at the discretion of the manufacturer. If you have a special request, please contact us.
Handling Advice:	Avoid repeated freeze-thaw cycles.
Storage:	-80 °C
Storage Comment:	Store at -80°C.
Expiry Date:	Unlimited (if stored properly)