OPRD1 Protein, Human (Cell-Free, His)

Cat. No.:	HY-P702402
Synonyms:	Delta-type opioid receptor; D-OR-1; DOR-1
Species:	Human
Source:	E. coli Cell-free
Accession:	P41143 (M1-A372)
Gene ID:	4985
Molecular Weight:	Monomer: 39 kDa Dimer: 78 kDa

PROPERTIES

AA Sequence	M E P A P S A G A E L Q P P L F A N A S D A Y P S A C P S A G A N A S G P P G A R S A S S L A L A I A I T A L Y S A V C A V G L L G N V L V M F G I V R Y T K M K T A T N I Y I F N L A L A D A L A T S T L P F Q S A K Y L M E T W P F G E L L C K A V L S I D Y Y N M F T S I F T L T M M S V D R Y I A V C H P V K A L D F R T P A K A K L I N I C I W V L A S G V G V P I M V M A V T R P R D G A V V C M L Q F P S P S W Y W D T V T K I C V F L F A F V V P I L I I T V C Y G L M L L R L R S V R L L S G S K E K D R S L R R I T R M V L V V V G A F V V C W A P I H I F V I V W T L V D I D R R D P L V V A A L H L C I A L G Y A N S S L N P V L Y A F L D E N F K R C F R Q L C R K P C G R P D P S S F S R A R E A T A R E R V T A C T P S D G P G G G A A A
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.22 μm filtered solution PBS, 0.05% Brij-78, 6%Trehalose, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add 5-50% of glycerol (final concentration). Our default final concentration of glycerol is 50%. Customers could use it as reference.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The OPRD1 Protein, a G-protein coupled receptor, serves as a receptor for endogenous enkephalins and a subset of other

opioids. Upon ligand binding, the receptor undergoes a conformational change, initiating signaling via guanine nucleotide-binding proteins (G proteins) and modulating downstream effectors like adenylate cyclase, resulting in the inhibition of adenylate cyclase activity. Additionally, OPRD1 inhibits neurotransmitter release by reducing calcium ion currents and increasing potassium ion conductance. Crucially, it plays a pivotal role in the perception of pain and opiate-mediated analgesia, contributing to the development of analgesic tolerance to morphine. OPRD1 may form homooligomers and forms a heterodimer with OPRM1, interacting with GPRASP1 and RTP4 to regulate cell surface localization of the OPRD1-OPRM1 heterodimer. These interactions highlight the complex regulatory mechanisms through which OPRD1 modulates opioid signaling and analgesic responses.

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