

Recombinant Rat CFTR Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52342

Size: 10ug, 100ug

Protein Name: Cystic fibrosis transmembrane conductance regulator (CFTR) (ATP-binding cassette sub-family C member 7) (Channel conductance-controlling ATPase) (EC 5.6.1.6) (cAMP-dependent chloride channel)

Synonym: Cfr, Abcc7

UniProt ID: P34158

UniProt Link: www.uniprot.org/uniprotkb/P34158/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1476 AA

Molecular Weight: 168 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MQKSPLEKASFISKLFSSWTTPILRKGYRHHLELSDIYQAPSSDSADHLSEKLEREWDREQASKKKP
QLIHALLRRCFVWRVFYGVLLYLGEVTKAVQPVLLGRIIASYDPDNTTEERSIAIYLGIGLCLLFIVRTL
HPAIFGLHHIGMQMRIAMFSLIYKTKLSSRVLDKISIGQLISLLSNNLNKFDGLALAHFIWIAPLQVV
LLMGLLWDLQFSAFCGLGLLIVLVIFQAILGKMMVKYRDKRAAKINERLVITSEVIDNIYSVKAYCWES
AMEKIIESLREEELKMTRRSAYMRFFTSSAFFFSGFFVFLSVLPYTVINGIVLRKIFTTISFCIVLRMSV
TRQFPTAVQIWDYSLGMIRKIQDFLQTQEYKVLNLMFTGLVMENVTAFWEEGFQELLEKVQLNND
DRKTSNGENHLSFSLHCLVGNPVLKNINLNKKGEMLAITGSTGAGKTSLLMLILGELEASEGIIKHSG
RVSFSSQISWIMPGTIKENIIFGVSYDEYRYKSVVKACQLQEDITKFAEQDNTVLGEGGVTLSSGGQRA
RISLARAVYKDADLYLLDSPFGYLDVLTTEEQIFESCVCKLMASKTRILVTSKMEQLKKADKILILHEGSS
YFYGTFSSELQSLRPDFSSKLMGYDTFDQFTEERRSSILTETLRRFSVDDASTTWNKAKQSFRQTGEF
GEKRKNSILSSFSVKKISIVQKTPLSIEGESDDLQERRLSLVPDSEHGAEALPRSNMITAGPTFPGR
RQSVLDLMTFTPSVSSSLQRTRASIRKISLAPRISLKEEDIYSRRLSQDSTLNITEEINEEDLKECFFD
DMVKIPTVTTWNTYLRYFTLHRLFAVLWCVLVFLVEVAASLFLVWLLKNNPVNGGNGTKIANTSY
VVVITSSSFYIYFIVGVADTLLALSLFRGLPLVHTLITASKILHRKMLHSILHAPMSTFNKLKAGGILNR
FSKDIALDDFLPLTIFDFIQLLFIVVGAIIVVSALQPYIFLATVPGLAVFILLRAYFLHTSQQLKQLESEGR
SPIFTHLVTSKGLWTLRAFRRQTYFETLFHKALNLHTANWFMYLATLRWFQMRIDMIFVLFFIVVTFI
SILTTGEGEGTTGIILTLAMNIMSTLQWAVNSSIDTDSLMSVSRVFKFIDIQTEESICTKIMKELHSEDS



PNALVIKNEHVKKCDTWPSGGEMVVKDLTVKYVDDGNAILENISFSISPGQRVGLLGRTGSGKSTLL
SAFLRMLNIKGEIQIDGVSWNSMTLQEWKAFGVITQKVIFSGTFRQNLDPNGKWRDEEIWKVADQ
VGLKSVIEQFPQGQLNFTLVDDGGYVLSHGHKQLMCLARSVLSKAKIILLDEPSANLDPITYQVIRRVLRQ
AFAGCTVVLCEHRIEAMLDQCQRFLVIEQGNVWQYESLQALLSEKSVFQRALSSEKMKLFHGRHSS
KQKPRQTITAVKEETEEEVQETRL

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Cystic fibrosis transmembrane conductance regulator (CFTR) (ATP-binding cassette sub-family C member 7) (Channel conductance-controlling ATPase) (EC 5.6.1.6) (cAMP-dependent chloride channel) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Epithelial ion channel that plays an important role in the regulation of epithelial ion and water transport and fluid homeostasis. Mediates the transport of chloride ions across the cell membrane (By similarity). Possesses an intrinsic ATPase activity and utilizes ATP to gate its channel; the passive flow of anions through the channel is gated by cycles of ATP binding and hydrolysis by the ATP-binding domains (By similarity). The ion channel is also permeable to HCO₃⁻; selectivity depends on the extracellular chloride concentration. Exerts its function also by modulating the activity of other ion channels and transporters. Contributes to the regulation of the pH and the ion content of the epithelial fluid layer. Modulates the activity of the epithelial sodium channel (ENaC) complex, in part by regulating the cell surface expression of the ENaC complex. May regulate bicarbonate secretion and salvage in epithelial cells by regulating the transporter SLC4A7. Can inhibit the chloride channel activity of ANO1 (By similarity). Plays a role in the chloride and bicarbonate homeostasis during sperm epididymal maturation and capacitation (By similarity).

Subcellular Localization: Apical cell membrane ; Multi-pass membrane protein . Early endosome membrane ; Multi-pass membrane protein . Cell membrane ; Multi-pass membrane protein . Recycling endosome membrane ; Multi-pass membrane protein . Endoplasmic reticulum membrane ; Multi-pass membrane protein . Nucleus . Note=The channel is internalized from the cell surface into an endosomal recycling compartment, from where it is recycled to the cell membrane (By similarity). In the oviduct and bronchus, detected on the apical side of epithelial cells, but not associated with cilia (By similarity). In Sertoli cells, a processed product is detected in the nucleus (PubMed:29453757). ER stress induces GORASP2-mediated unconventional (ER/Golgi-independent) trafficking of core-glycosylated CFTR to cell membrane (By similarity).

6. Notes



- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.