Recombinant CLCKA protein (His tag)

Catalog Number	542391
Synonyms	Chloride channel Ka; ClC-K1
Species	Human
Expression System	E. coli
Accession	P51800
Molecular Weight	Predictes a molecular mass of 21.52 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 22 kDa band.

Product Information

Sequence Region	507-687
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>85%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 507-687 aa (P51800) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Chloride Channel Protein ClC-Ka (CLCNKA) Fragment (aa 507-687) – a high-purity protein fragment encompassing the CBS 1 and CBS 2 domains, ideal for investigating chloride channel regulation, ion selectivity, and functional studies in renal and auditory systems. Chloride channel protein ClC-Ka, encoded by the CLCNKA gene, is an anion-selective channel permeable to small monovalent anions with a selectivity order of chloride > bromide > nitrate > iodide. It functions as a homodimeric channel, where each subunit has its own ion conduction pathway, and exhibits dual gating mechanisms: two fast gates controlling each subunit independently and a slow common gate that operates both subunits simultaneously. The channel assembles with the regulatory subunit BSND/Barttin for proper localization at the basolateral plasma membrane and activation. In physiological contexts, ClC-Ka mediates transepithelial chloride transport in the thin ascending limb of Henle's loop, contributing to urine concentration by generating a hypertonic medullary interstitium. It also conducts chloride currents in the stria vascularis of the inner ear, essential for establishing the endocochlear potential required for normal hearing. The protein is localized to the basolateral cell membrane and is a multi-pass membrane protein, underscoring its role in specialized epithelial functions.