

Recombinant Rat AT2B1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52270

Size: 10ug, 100ug

Protein Name: Plasma membrane calcium-transporting ATPase 1 (EC 7.2.2.10) (Plasma membrane calcium ATPase isoform 1) (PMCA1) (Plasma membrane calcium pump isoform 1)

Synonym: Atp2b1

UniProt ID: P11505

UniProt Link: www.uniprot.org/uniprotkb/P11505/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1220 AA

Molecular Weight: 135 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGDMANNSVAYSGVKNSLKEANHDGDFGITLAELRALMELRSTDALRKIQESYGDVYGICTKLKTSP
NEGLSGNPADLERREAVFGKNFIPPKPKPTFLQLVWEALQDVTLLILEIAAIVSLGLSFYQPPEGDNAL
CGEVSVGEEEGEGETGWIEGAAILLSVVCVVLVTA FNDSKEKQFRGLQSRIEQEQKFTVIRGGQVI
QIPVADITVGDIQVKYGDLLPADGILIQGNDLKIDESSLTGESDHVKKSLDKDPLLLSGTHVMEGSGR
MVVTAVGVNSQTGIIFTLLGAGGEEEEKKDEKKKEKKNKKQDGA IENRNKAKAQDGAAMEMQPLKS
EEGGDGDEKDKKKANLPKKEKSVLQGKLTKLAVQIGKAGLLMSAITVIILVLYFVIDTFWVQKRPWLA
ECTPIYIQYFVKFFIIGVTVLVAVPEGLPLAVTISLAYSVKKMMKDNNLVRHLDACETMGNATAICSDK
TGTLTMNRMTVVQAYINEKHKKVPEPEAIPPNI LSYLVTGISVNCA YTSKILPPEKEGGLPRHVG NKT
ECALLGFLDLKRDYQDVRNEIPEEALYKVYTFNSVRKSMSTVLKNSDGSFRIFSKGASEILKKCFKIL
SANGEAKVFRPRDRDDIVKTVIEPMASEGLRTICLAFRDFPAGEPEPEWDNENDVVTGLTCIAVVGIE
DPVRPEVPEAIIKKCQRAGITVRMVTGDNINTARAIATKCGILHPGEDFLCLEGKDFNRRIRNEKGEIEQ
ERIDKIWPKLRLVLRSSPTDKHTLVKGIIDSTVSEQRQVAVTGDGTNDGPALKKADVGFAMGIAGTD
VAKEASDIILTDDNFTSIVKAVMWGRNVYDSISKFLQFQLTVNVVAVIVAFTGACITQDSPLKAVQMLW
VNLIMDTLASLALATEPPTESLLLLRPYGRNKPLISRTMMKNILGHAFYQLVVVFTLLFAGEKFFDIDS
GRNAPLHAPPSEHYTIVFNTFVLMQLFNEINARKIHGERNVFEGIFNNAIFCTIVLGTFFVQIIIVQFGGK
PFSCSELSIEQWLWSIFLGMGTLLWGQLISTIPTSR LKFLKEAGHGTQKEEIP EEELAEDVEEIDHAER



ELRRGQILWFRGLNRIQTQIRVVNAFRSSLYEGLEKPESRSSIHNFMTTHPEFRIEDSEPLIPLIDDTDA
EDDAPTKRNSPPSPNKNNAVDSGIHLTIEMNKSATSSSPGSPLHSLETSL

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 Plasma membrane calcium-transporting ATPase 1 (EC 7.2.2.10) (Plasma membrane calcium ATPase isoform 1) (PMCA1) (Plasma membrane calcium pump isoform 1) 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: Catalyzes the hydrolysis of ATP coupled with the transport of calcium from the cytoplasm to the extracellular space thereby maintaining intracellular calcium homeostasis. Plays a role in blood pressure regulation through regulation of intracellular calcium concentration and nitric oxide production leading to regulation of vascular smooth muscle cells vasoconstriction. Positively regulates bone mineralization through absorption of calcium from the intestine. Plays dual roles in osteoclast differentiation and survival by regulating RANKL-induced calcium oscillations in preosteoclasts and mediating calcium extrusion in mature osteoclasts (By similarity). Regulates insulin sensitivity through calcium/calmodulin signaling pathway by regulating AKT1 activation and NOS3 activation in endothelial cells (By similarity). May play a role in synaptic transmission by modulating calcium and proton dynamics at the synaptic vesicles.

Subcellular Localization: Cell membrane ; Multi-pass membrane protein . Basolateral cell membrane . Synapse . Presynaptic cell membrane ; Multi-pass membrane protein . Cytoplasmic vesicle, secretory vesicle, synaptic vesicle membrane ; Multi-pass membrane protein .

Note=Colocalizes with SV2A in photoreceptor synaptic terminals. Colocalizes with NPTN to the immunological synapse. Colocalizes with EPB41 to the basolateral membrane in enterocyte.

Preferentially sorted to recycling synaptic vesicles.

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.