# Recombinant P4K2A protein (His tag)

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| **Catalog Number** | 543502 |
| **Synonyms** | Phosphatidylinositol 4-kinase type II-alpha |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q9BTU6 |
| **Molecular Weight** | Predictes a molecular mass of 48.10 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 49 kDa band. |

## Product Information

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| **Sequence Region** | 76-479 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >87%, 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 76-479 aa (Q9BTU6) were fused with 6His tag. |

## Storage & Handling

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| **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.<br>Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise. |

## Description

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| **Description** | Recombinant Human Phosphatidylinositol 4-kinase type 2-alpha (PI4K2A) fragment (residues 76-479) is a high-purity protein designed for functional studies. This fragment fully encompasses the PI3K/PI4K catalytic domain, making it an ideal tool for investigating phosphatidylinositol phosphorylation, lipid signaling pathways, and membrane trafficking mechanisms in vitro.<br>Phosphatidylinositol 4-kinase type 2-alpha (PI4K2A) is a membrane-bound kinase that catalyzes the phosphorylation of phosphatidylinositol (PI) to phosphatidylinositol 4-phosphate (PI4P). This reaction represents the first committed step in generating phosphatidylinositol 4,5-bisphosphate (PIP2), a crucial precursor for the second messenger inositol 1,4,5-trisphosphate (InsP3). The enzyme plays vital roles in endocytosis, Golgi function, protein sorting, membrane trafficking, and neuronal survival. PI4K2A localizes to multiple cellular compartments including the Golgi apparatus, trans-Golgi network membrane, endosomes, plasma membrane, membrane rafts, and neuronal structures such as dendrites and synapses. Its transport to neuron projections depends on BLOC-1 and AP-3 complexes, highlighting its importance in neuronal function and intracellular signaling networks. |