# Recombinant AGK protein (His tag)

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| **Catalog Number** | 540434 |
| **Synonyms** | hAGK; Multiple substrate lipid kinase; HsMuLK; MuLK; Multi-substrate lipid kinase |
| **Species** | Human |
| **Expression System** | E. coli |
| **Accession** | Q53H12 |
| **Molecular Weight** | Predictes a molecular mass of 48.80 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 49 kDa band. |

## Product Information

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| **Sequence Region** | 1-422 |
| **Form** | Lyophilized powder |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4 |
| **Purity** | >88%, 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 1-422 aa (Q53H12) 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 Acylglycerol Kinase (hAGK) Fragment (aa 1-422) is a high-purity protein preparation encompassing the complete DAGKc catalytic domain. This fragment serves as an essential research tool for investigating lipid kinase activity, mitochondrial protein import mechanisms, and signaling pathways involving lysophosphatidic acid and phosphatidic acid metabolism.<br>Human Acylglycerol Kinase (AGK) is a mitochondrial multi-substrate lipid kinase with dual enzymatic functions. It phosphorylates both monoacylglycerol and diacylglycerol to produce lysophosphatidic acid (LPA) and phosphatidic acid (PA) respectively, while also phosphorylating ceramide. Beyond its lipid kinase activity, AGK functions as a critical component of the TIM22 complex, facilitating the import and insertion of multi-pass transmembrane proteins into the mitochondrial inner membrane, particularly metabolite carriers like ANT1/SLC25A4 and SLC25A24. The protein localizes to the mitochondrial intermembrane space where it associates with the inner membrane as a peripheral membrane protein. Overexpression of AGK enhances LPA formation and secretion, leading to EGFR transactivation and subsequent MAPK signaling pathway activation, ultimately promoting increased cell growth. |