

## Recombinant Human Eukaryotic Translation Initiation Factor 2-alpha Kinase 3, GST-tagged

Cat. No. EIF2AK3-1010H    Lot. No. (See product label)

### SPECIFICATION

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Overview  | Recombinant human EIF2AK3 (563-1115) was expressed in E. coli cells using an N-terminal GST tag.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Species           | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Source            | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ProteinLength     | 563-1115 a.a.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description       | EIF2AK3 phosphorylates the alpha subunit of eukaryotic translation-initiation factor 2 (EIF2) leading to its inactivation and a rapid reduction of translational initiation and repression of global protein synthesis. EIF2AK3 is a type I membrane protein located in the endoplasmic reticulum (ER), where it is induced by ER stress caused by malformed proteins. EIF2AK3 plays a major role in the ability of cells to adapt to ER stress and is also involved in an integrated adaptive response to hypoxic stress in HeLa cells. EIF2AK3 functions in iron homeostasis and may play a role in hemolytic and inflammatory anemia. |
| Applications      | Kinase Assay; Western Blot                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Molecular Weight  | 115 kDa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Expression System | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

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|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Form</b>              | Recombinant protein stored in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 10 mM glutathione, 0.1 mM EDTA, 0.25 mM DTT, 0.1 mM PMSF, 25 % glycerol.                                                                                             |
| <b>Specific Activity</b> | 18 nmol/min/mg                                                                                                                                                                                                                          |
| <b>Purity</b>            | > 90 %                                                                                                                                                                                                                                  |
| <b>Concentration</b>     | 0.1 ug/ul                                                                                                                                                                                                                               |
| <b>Sequences</b>         | 563-1115                                                                                                                                                                                                                                |
| <b>Storage</b>           | Store product at -70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles. |
| <b>Pathways</b>          | Alzheimer"s disease; Diabetes pathways; Hepatitis C; Herpes simplex infection; Influenza A; Measles; PERK regulated gene expression; Protein processing in endoplasmic reticulum; Translation Factors; Unfolded Protein Response        |

## GENE INFORMATION

|                        |                                                                                                                                                                                                                                                                                                                    |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>       | EIF2AK3 eukaryotic translation initiation factor 2-alpha kinase 3 [ Homo sapiens ]                                                                                                                                                                                                                                 |
| <b>Official Symbol</b> | EIF2AK3                                                                                                                                                                                                                                                                                                            |
| <b>Synonyms</b>        | EIF2AK3; eukaryotic translation initiation factor 2-alpha kinase 3; PEK; WRS; PERK; DKFZp781H1925; hsPEK; OTTHUMP00000207186; OTTHUMP00000207187; OTTHUMP00000207188; pancreatic EIF2-alpha kinase; PRKR-like endoplasmic reticulum kinase; eukaryotic translation initiation factor 2 alpha kinase 3; EC 2.7.11.1 |
| <b>Gene ID</b>         | 9451                                                                                                                                                                                                                                                                                                               |

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|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>mRNA Refseq</b>         | NM_004836                                                                                                                                                                                                       |
| <b>Protein Refseq</b>      | NP_004827                                                                                                                                                                                                       |
| <b>MIM</b>                 | 604032                                                                                                                                                                                                          |
| <b>UniProt ID</b>          | Q9NZJ5                                                                                                                                                                                                          |
| <b>Chromosome Location</b> | 2p12                                                                                                                                                                                                            |
| <b>Function</b>            | ATP binding; eukaryotic translation initiation factor 2alpha kinase activity; identical protein binding; nucleotide binding; protein binding; protein kinase activity; protein serine/threonine kinase activity |

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