# EIF2AK3 (PERK) phosphorylates EIF2S1 (eIF2-alpha)Phosphorylation of eIF2-alpha by PERK

D'Eustachio, P., Gillespie, ME., Matthews, L., May, B., Urano, F.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.



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# Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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## Literature references

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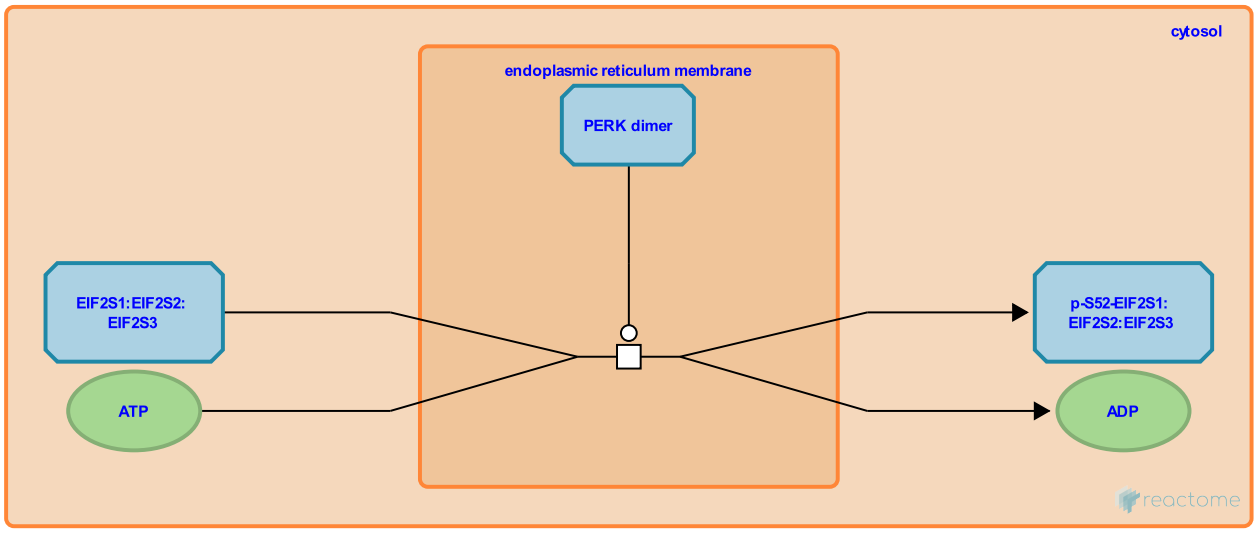
## EIF2AK3 (PERK) phosphorylates EIF2S1 (eIF2-alpha)Phosphorylation of eIF2-alpha by PERK ↗

**Stable identifier:** R-HSA-381111

**Type:** transition

**Compartments:** cytosol, endoplasmic reticulum membrane




The C-terminal domain of PERK (EIF2AK3) has kinase activity when PERK homodimerizes. PERK kinase specifically phosphorylates Ser52 of eIF2-alpha, causing an arrest in translation. The result is that translation of ER-targeted proteins is halted on ribosomes in the vicinity of activated PERK. The general arrest of translation results in the loss of short-lived proteins such as Cyclin D1, causing an arrest of the cell cycle in G1.

## Literature references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## Editions

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