

## Product datasheet

# Human Heme-regulated inhibitor peptide ab30694

### Description

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<b>Product name</b>	Human Heme-regulated inhibitor peptide
<b>Animal free</b>	No
<b>Nature</b>	Synthetic
<b>Species</b>	Human

### Specifications

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Our [Abpromise guarantee](#) covers the use of **ab30694** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

**Form** Liquid

**Additional notes**

- First try to dissolve a small amount of peptide in either water or buffer. The more charged residues on a peptide, the more soluble it is in aqueous solutions.
- If the peptide doesn't dissolve try an organic solvent e.g. DMSO, then dilute using water or buffer.
- Consider that any solvent used must be compatible with your assay. If a peptide does not dissolve and you need to recover it, lyophilise to remove the solvent.
- Gentle warming and sonication can effectively aid peptide solubilisation. If the solution is cloudy or has gelled the peptide may be in suspension rather than solubilised.
- Peptides containing cysteine are easily oxidised, so should be prepared in solution just prior to use.

Previously labelled as EIF2AK1.

### Preparation and Storage

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**Stability and Storage**

Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

Information available upon request.

### General Info

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**Function**

Inhibits protein synthesis at the translation initiation level, in response to various stress conditions, including oxidative stress, heme deficiency, osmotic shock and heat shock. Exerts its function

through the phosphorylation of EIF2S1 at 'Ser-48' and 'Ser-51', thus preventing its recycling. Binds heme forming a 1:1 complex through a cysteine thiolate and histidine nitrogenous coordination. This binding occurs with moderate affinity, allowing it to sense the heme concentration within the cell. Thanks to this unique heme-sensing capacity, plays a crucial role to shut off protein synthesis during acute heme-deficient conditions. In red blood cells (RBCs), controls hemoglobin synthesis ensuring a coordinated regulation of the synthesis of its heme and globin moieties. Thus plays an essential protective role for RBC survival in anemias of iron deficiency. Similarly, in hepatocytes, involved in heme-mediated translational control of CYP2B and CYP3A and possibly other hepatic P450 cytochromes. May also contain ER stress during acute heme-deficient conditions.

**Tissue specificity**

Expressed predominantly in erythroid cells. At much lower levels, expressed in hepatocytes (at protein level).

**Sequence similarities**

Belongs to the protein kinase superfamily. Ser/Thr protein kinase family. GCN2 subfamily. Contains 2 HRM (heme regulatory motif) repeats. Contains 1 protein kinase domain.

**Post-translational modifications**

Activated by autophosphorylation; phosphorylated predominantly on serine and threonine residues, but also on tyrosine residues. Autophosphorylation at Thr-488 is required for kinase activation. The active autophosphorylated form apparently is largely refractory to cellular heme fluctuations.

**Cellular localization**

Cytoplasm.

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**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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