

Product datasheet

Recombinant human Heme-regulated inhibitor protein  
ab131665

5 Images

Description

---

<b>Product name</b>	Recombinant human Heme-regulated inhibitor protein
<b>Biological activity</b>	The specific activity of ab131665 was determined to be 12 nmol/min/mg.
<b>Purity</b>	> 70 % SDS-PAGE. Assessed by densitometry.
<b>Expression system</b>	Baculovirus infected Sf9 cells
<b>Accession</b>	<a href="#">Q9BQI3</a>
<b>Protein length</b>	Full length protein
<b>Animal free</b>	No
<b>Nature</b>	Recombinant
<b>Species</b>	Human
<b>Predicted molecular weight</b>	120 kDa including tags
<b>Amino acids</b>	1 to 630

Specifications

---

Our [Abpromise guarantee](#) covers the use of **ab131665** in the following tested applications.

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

<b>Applications</b>	Western blot Functional Studies SDS-PAGE
<b>Form</b>	Liquid
<b>Additional notes</b>	<a href="#">ab204878</a> (RS Repeat Peptide peptide) can be utilized as a substrate for assessing kinase activity Previously labelled as EIF2AK1.

Preparation and Storage

---

<b>Stability and Storage</b>	Shipped on dry ice. Upon delivery aliquot and store at -80°C. Avoid freeze / thaw cycles.
------------------------------	---

pH: 7.50

Constituents: 0.31% Glutathione, 0.002% PMSF, 0.005% DTT, 0.79% Tris HCl, 0.003% EDTA, 25% Glycerol, 0.88% Sodium chloride

This product is an active protein and may elicit a biological response in vivo, handle with caution.

## General Info

---

### 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.

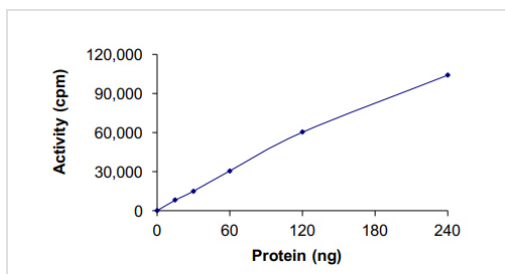
### Cellular localization

Cytoplasm.

---

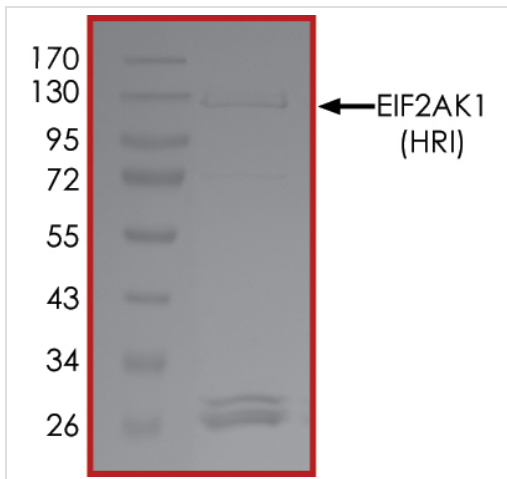
## Images

---



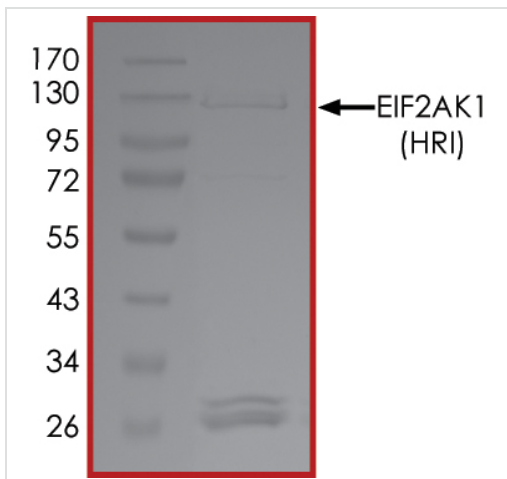
The specific activity of Heme-regulated inhibitor (ab131665) was determined to be 14 nmol/min/mg as per activity assay protocol

Functional Studies - Recombinant human Heme-regulated inhibitor protein (ab131665)



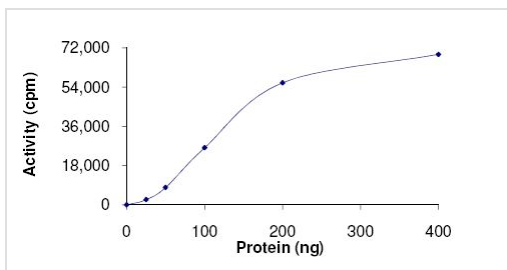
SDS PAGE analysis of ab131665

SDS-PAGE - Recombinant human Heme-regulated inhibitor protein (ab131665)



SDS PAGE analysis of ab131665

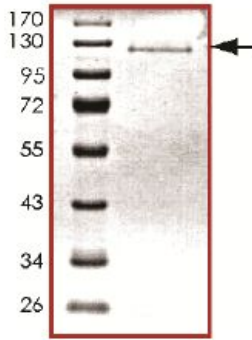
SDS-PAGE - Recombinant human Heme-regulated inhibitor protein (ab131665)



The specific activity of ab131665 was determined to be 12 nmol/min/mg.

Functional Studies - Recombinant human Heme-regulated inhibitor protein (ab131665)

## SDS Page analysis of ab131665



SDS-PAGE - Recombinant human Heme-regulated inhibitor protein (ab131665)

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

### Our Abpromise to you: Quality guaranteed and expert technical support

---

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### Terms and conditions

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors