

Recombinant Human HIF-1 alpha Protein

Catalog No.: RP03151 **Recombinant**

Sequence Information

Species	Gene ID	Swiss Prot
Human	3091	Q16665-1

Tags

N-His

Synonyms

Hypoxia-inducible factor 1-alpha; HIF1-alpha; HIF1A; BHLHE78; MOP1; PASD8

Product Information

Source	Purification
<i>E. coli</i>	> 95% by SDS-PAGE.

Endotoxin

Please contact us for more information.

Formulation

Lyophilized from a 0.22 µm filtered solution of 50mM Tris, 100mM NaCl, 1mM EDTA, pH 8.0. Contact us for customized product form or formulation.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Contact

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Background

HIF-1 alpha, also known as HIF1A, contains 1 basic helix-loop-helix (bHLH) domain, 1 PAC (PAS-associated C-terminal) domain, and 2 PAS (PER-ARNT-SIM) domains. It is one of the two subunits of Hypoxia-inducible factor-1 (HIF1). HIF1 is a transcription factor found in mammalian cells cultured under reduced oxygen tension that plays an essential role in cellular and systemic homeostatic responses to hypoxia. HIF1 is a heterodimer composed of an alpha subunit and a beta subunit. The beta subunit has been identified as the aryl hydrocarbon receptor nuclear translocator (ARNT). HIF-1 alpha is expressed in most tissues with the highest levels in the kidney and heart. It is overexpressed in the majority of common human cancers and their metastases, due to the presence of intratumoral hypoxia and as a result of mutations in genes encoding oncoproteins and tumor suppressors. HIF-1 alpha functions as a master transcriptional regulator of the adaptive response to hypoxia. Under hypoxic conditions, it activates the transcription of over 40 genes, including erythropoietin, glucose transporters, glycolytic enzymes, vascular endothelial growth factor, HILPDA, and other genes whose protein products increase oxygen delivery or facilitate metabolic adaptation to hypoxia. HIF1A plays an essential role in embryonic vascularization, tumor angiogenesis, and the pathophysiology of ischemic disease. HIF-1 alpha binds to core DNA sequence 5'-[AG]CGTG-3' within the hypoxia response element (HRE) of target gene promoters. Activation requires the recruitment of transcriptional coactivators such as CREBBP and EP300.

Basic Information

Description

Recombinant Human HIF-1 alpha Protein is produced by *E. coli* expression system. The target protein is expressed with sequence (Arg575-Asn826) of Human HIF-1 alpha (Accession #NP_001521.1) fused with 6×His tag at the N-terminus.

Bio-Activity

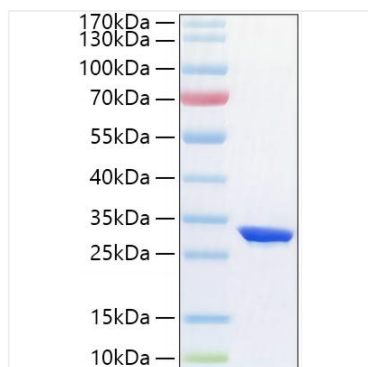
Storage

Store the lyophilized protein at -20°C to -80 °C for 12 months.

After reconstitution, the protein solution is stable at -20 °C for 3 months, at 2-8 °C for up to 1 week.

Avoid repeated freeze/thaw cycles.

Validation Data



Recombinant Human HIF-1 alpha Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 34 kDa.