

# Recombinant Mouse IRF3 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP51504

Size: 10ug, 100ug

Protein Name: Interferon regulatory factor 3 (IRF-3)

Synonym: Irf3

UniProt ID: P70671

UniProt Link: [www.uniprot.org/uniprotkb/P70671/entry](http://www.uniprot.org/uniprotkb/P70671/entry)

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 419 AA

Molecular Weight: 47 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

METPKPRILPWLVSQDLGQLEGVAWLDESRTFRIPWKHGLRQDAQMADFGIFQAWAEASGAYTP  
GKDKPDVSTWKRNFERSALNRKEVLRLAADNSKDPYDPHKVYEFVTPGARDFVHLGASPDITNGKSS  
LPHSQENLPKLFQDGLILGPLKDEGSSDLAIVSDPSQQLPSPNVNINFLNPAPQENPLKQLLAEEQWEF  
EVTAFYRGRQVFQQTLCFPGGLRLVGSTADMTLPWQPVTLPDPEGFLTDKLVKEYVVGQVLKGLGN  
GLALWQAGQCLWAQRLGHSHAFWALGEELLPSGRGPDGEVHKDKDGAVFDLRPFVADLIAFMEG  
SGHSPRYTLWFCMGEMWPQDQPWWKRLVMVKVPTCLKELLEMAREGGASSLKTVDLHISNSQPI  
SLTSDQYKAYLQDLVEDMDFQATGNI

## 3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

## 4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

## 5. Product Description

This product is recombinant Interferon regulatory factor 3 (IRF-3) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

**Protein Function:** Key transcriptional regulator of type I interferon (IFN)-dependent immune responses which plays a critical role in the innate immune response against DNA and RNA viruses (PubMed:15800576, PubMed:39719712). Regulates the transcription of type I IFN genes (IFN-alpha and IFN-beta) and IFN-stimulated genes (ISG) by binding to an interferon-stimulated response element (ISRE) in their promoters (PubMed:15800576, PubMed:39719712). Acts as a more potent activator of the IFN-beta (IFNB) gene than the IFN-alpha (IFNA) gene and plays a critical role in both the early and late phases of the IFNA/B gene induction (PubMed:16846591, PubMed:16979567, PubMed:20049431). Found in an inactive form in the cytoplasm of uninfected cells and following viral infection, double-stranded RNA (dsRNA), or toll-like receptor (TLR) signaling, is phosphorylated by IKBKE and TBK1 kinases (PubMed:16846591, PubMed:16979567, PubMed:20049431). This induces a conformational change, leading to its dimerization and nuclear localization and association with CREB binding protein (CREBBP) to form dsRNA-activated factor 1 (DRAF1), a complex which activates the transcription of the type I IFN and ISG genes (PubMed:16846591, PubMed:16979567, PubMed:20049431). Can activate distinct gene expression programs in macrophages and can induce significant apoptosis in primary macrophages (PubMed:16846591, PubMed:16979567, PubMed:20049431).; [Isoform 2]: May participate in the regulation of type I interferon transcription. May act as a modulator of isoform 1 function, decreasing its transcriptional activity during viral infection. Specifically binds to IFN-stimulated response elements (ISREs) in promoters of target genes, such as that of IFNB1.

**Subcellular Localization:** Cytoplasm . Nucleus . Mitochondrion . Note=Shuttles between cytoplasmic and nuclear compartments, with export being the prevailing effect. When activated, IRF3 interaction with CREBBP prevents its export to the cytoplasm. Recruited to mitochondria via TOMM70:HSP90AA1 upon Sendai virus infection.; [Isoform 2]: Cytoplasm . Nucleus . Note=Contrary to isoform 1, which is almost exclusively located in the cytoplasm under resting conditions, isoform 2 is located both in the cytoplasm and the nucleus in the absence of viral infection or dsRNA exposure.

## 6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.