

IRF3 Protein, Mouse (P.pastoris, Myc, His)

Cat. No.:	HY-P71747
Synonyms:	Irf3; Interferon regulatory factor 3; IRF-3
Species:	Mouse
Source:	P. pastoris
Accession:	P70671 (M1-I419)
Gene ID:	54131
Molecular Weight:	Approximately 50.9 kDa

PROPERTIES

AA Sequence

METPKPRIILP	WLVSQLDLGG	LEGVAWLDES	RTRFRIPWKH
GLRQDAQMAD	FGIFQAWAEA	SGAYTPGKDK	PDVSTWKRNF
RSALNRKEVL	RLAADNSKDP	YDPHKVYEFV	TPGARDFVHL
GASPDNTGKS	SLPHSQENLP	KLFDGLILGP	LKDEGSSDLA
IVSDPSQQLP	SPNVNNFLNP	APQENPLKQL	LAEEQWFEFV
TAFYRGRQVF	QQTLCFCPGL	RLVGSTADMT	LPWQPVTLPD
PEGFLTDLKLV	KEYVGGQVLKG	LGNGLALWQA	GQCLWAQRLG
HSHAFWALGE	ELLPDSGRGP	DGEVHKDKDG	AVFDLRPFVA
DLIAFMEGSG	HSPRYTLWFC	MGEMWPQDQP	WVKRLVMVKV
VPTCLKELLE	MAREGGASSL	KTVDLHISNS	QPISLTSDQY
KAYLQDLVED	MDFQATGNI		

Appearance Lyophilized powder.

Formulation Lyophilized from a 0.2 µm sterile filtered PBS, 6% Trehalose, pH 7.4

Endotoxin Level <1 EU/µg, determined by LAL method.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH₂O.

Storage & Stability Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

IRF3, a key transcriptional regulator, plays a critical role in orchestrating type I interferon (IFN)-dependent immune responses against DNA and RNA viruses. It regulates the transcription of type I IFN genes (IFN-alpha and IFN-beta) and IFN-

stimulated genes by binding to an interferon-stimulated response element in their promoters, exhibiting greater potency in activating the IFN-beta gene. In uninfected cells, IRF3 remains in an inactive form in the cytoplasm, but upon viral infection, recognition of double-stranded RNA or toll-like receptor signaling leads to its phosphorylation by IKBKE and TBK1 kinases. This phosphorylation induces a conformational change, promoting dimerization, nuclear localization, and association with CREB binding protein to form dsRNA-activated factor 1 (DRAF1). This complex activates the transcription of type I IFN and IFN-stimulated genes, driving both early and late phases of gene induction. In the absence of viral infection, IRF3 is maintained as a monomer in an autoinhibited state, and its liberation for DNA binding and dimerization, along with nuclear localization, follows phosphorylation by TBK1 and IKBKE. This phosphorylation occurs in response to viral RNA, cytosolic DNA, or bacterial lipopolysaccharide, initiating a cascade involving innate adapter proteins (MAVS, STING1, or TICAM1) and culminating in the activation of IRF3, which subsequently induces IFNs in the nucleus.

Caution: Product has not been fully validated for medical applications. For research use only.

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