

PRODUCT INFORMATION



IRF3 (human, recombinant)

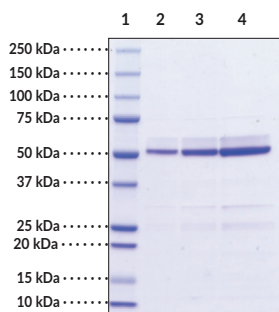
Item No. 22811

Overview and Properties

Synonym: Interferon Regulatory Factor 3
Source: N-terminally Histidine-tagged human IRF3 protein (full length) expressed in *E. coli*.
Amino acids: 1-427 (full length)
Uniprot No.: Q14653
Molecular Weight: 49.6 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by storing protein in aliquots
Stability: ≥1 year
Purity: ≥85% estimated by SDS-PAGE
Supplied in: 50 mM HEPES, pH 8.0, with 150 mM sodium chloride and 10% glycerol
Protein Concentration: *batch specific* mg/ml

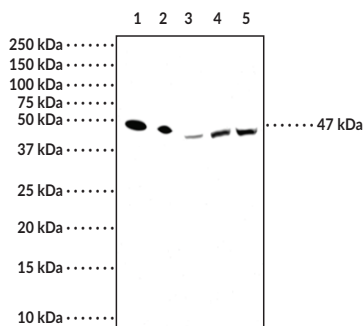
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

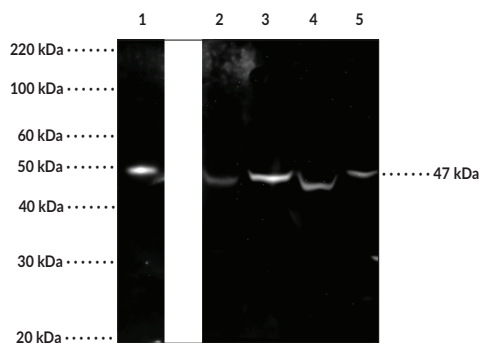


Lane 1: MW Markers
Lane 2: IRF3 (1 μg)
Lane 3: IRF3 (2 μg)
Lane 4: IRF3 (4 μg)

Representative gel image shown; actual purity may vary between each batch.



Lane 1: IRF3 (5 ng)
Lane 2: IRF3 (1 ng)
Lane 3: MCF7 Cell Lysate (50 μg)
Lane 4: A549 Cell Lysate (50 μg)
Lane 5: COS-1 Cell Lysate (50 μg)



Lane 1: IRF3 (1 ng)
Lane 2: Jurkat Cell Lysate (50 μg)
Lane 3: MCF-7 Cell Lysate (50 μg)
Lane 4: COS-1 Cell Lysate (50 μg)
Lane 5: A549 Cell Lysate (50 μg)

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Interferon regulatory factor 3, is a member of the IRF family. It plays a crucial role in activation of innate immunity and inflammation in response to viral infection, functioning as a molecular switch for antiviral activity.¹⁻⁵ Double-stranded RNA generated during a viral infection leads to IRF3 activation by serine/threonine phosphorylation by TBK1 or IKKε kinases, which induces a conformational change leading to its dimerization, nuclear localization, and association with CREBBP.^{1-3,6} The complex, known as DRAF1, activates transcription interferons alpha and beta, as well as other interferon-induced genes.^{1,6} These genes play a critical role in type 1 interferon (IFN)-dependent immune response.⁵ A recent study shows phosphorylation of innate immune adaptor proteins MAVS, STING, and TRIF recruits and specifies IRF3 phosphorylation and activation by the serine/threonine-protein kinase TBK1, thereby inducing the production of type-1 interferons.^{2,4,7}

References

1. Shu, C., Sankaran, B., Chaton, C.T., *et al.* Structural insights into the functions of TBK1 in innate antimicrobial immunity. *Structure* **21(7)**, 1137-1148 (2013).
2. Huang, J., Liu, T., Xu, L.G., *et al.* SIKE is an IKKε/TBK1-associated suppressor of TLR3- and virus-triggered IRF-3 activation pathways. *EMBO J.* **24(23)**, 4018-4028 (2005).
3. tenOever, B.R., Servant, M.J., Grandvaux, N., *et al.* Recognition of the measles virus nucleocapsid as a mechanism of IRF-3 activation. *J. Virol.* **76(8)**, 3659-3669 (2002).
4. Xu, L.G., Wang, Y.Y., Han, K.J., *et al.* VISA is an adapter protein required for virus-triggered IFN-β signaling. *Mol. Cell.* **19(6)**, 727-740 (2005).
5. Peteranderl, C. and Herold, S. The impact of the interferon/TNF-related apoptosis-inducing ligand signaling axis on disease progression in respiratory viral infection and beyond. *Front. Immunol.* **8:13** (2017).
6. Gu, L., Fullam, A., Brennan, R., *et al.* Human DEAD box helicase 3 couples IκB kinase ε to interferon regulatory factor 3 activation. *Mol. Cell. Biol.* **33(10)**, 2004-2015 (2013).
7. Liu, S., Cai, X., Wu, J., *et al.* Phosphorylation of innate immune adaptor proteins MAVS, STING, and TRIF induces IRF3 activation. *Science* **347(6227)**, aaa2630 (2015).