

# IRF3 Antibody

Purified Mouse Monoclonal Antibody (Mab)

Catalog # AM8483b

## Product Information

Application	WB, IHC-P, FC, IF, E
Primary Accession	<a href="#">Q14653</a>
Reactivity	Human, Green Monkey, Mouse
Host	Mouse
Clonality	monoclonal
Isotype	IgG1,k
Clone Names	1522CT766.58.24
Calculated MW	47219

## Additional Information

Gene ID	3661
Other Names	Interferon regulatory factor 3, IRF-3, IRF3
Target/Specificity	This IRF3 antibody is generated from a mouse immunized with a recombinant protein.
Dilution	WB~~1:2000 IHC-P~~1:100~500 FC~~1:25 IF~~1:25 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	IRF3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

Name	IRF3 {ECO:0000303   PubMed:9803267, ECO:0000312   HGNC:HGNC:6118}
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: <a href="#">22394562</a> , PubMed: <a href="#">24049179</a> , PubMed: <a href="#">25636800</a> , PubMed: <a href="#">27302953</a> , PubMed: <a href="#">31340999</a> , PubMed: <a href="#">36603579</a> , PubMed: <a href="#">8524823</a> , PubMed: <a href="#">39362857</a> ). 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:[11846977](#), PubMed:[16846591](#), PubMed:[16979567](#), PubMed:[20049431](#), PubMed:[32972995](#), PubMed:[36603579](#), PubMed:[8524823](#)). 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](#), PubMed:[36603579](#)). 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:[22394562](#), PubMed:[25636800](#), PubMed:[27302953](#), PubMed:[36603579](#)). 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:[16154084](#), PubMed:[27302953](#), PubMed:[33440148](#), PubMed:[36603579](#)). Can activate distinct gene expression programs in macrophages and can induce significant apoptosis in primary macrophages (PubMed:[16846591](#)). In response to Sendai virus infection, is recruited by TOMM70:HSP90AA1 to mitochondrion and forms an apoptosis complex TOMM70:HSP90AA1:IRF3:BAX inducing apoptosis (PubMed:[25609812](#)). Key transcription factor regulating the IFN response during SARS-CoV-2 infection (PubMed:[33440148](#)).

#### Cellular Location

Cytoplasm. Nucleus Mitochondrion. Note=Shuttles between cytoplasmic and nuclear compartments, with export being the prevailing effect (PubMed:10805757, PubMed:35922005). When activated, IRF3 interaction with CREBBP prevents its export to the cytoplasm (PubMed:10805757) Recruited to mitochondria via TOMM70:HSP90AA1 upon Sendai virus infection (PubMed:25609812).

#### Tissue Location

Expressed constitutively in a variety of tissues.

## Background

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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. 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. 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. 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. 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. Can activate distinct gene expression programs in macrophages and can induce significant apoptosis in primary macrophages.

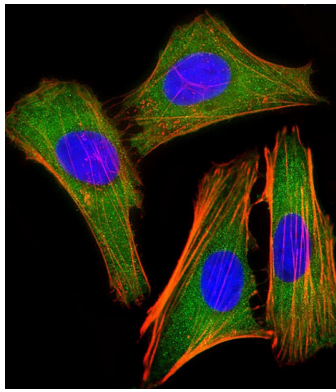
## References

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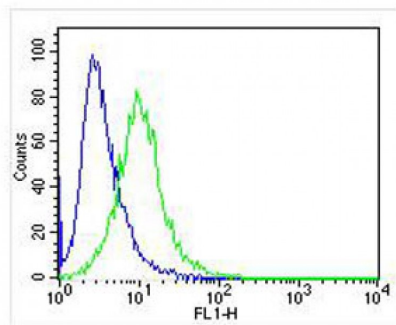
- Au W.W.-C.,et al.Proc. Natl. Acad. Sci. U.S.A. 92:11657-11661(1995).  
 Tabata Y.,et al.Submitted (FEB-2003) to the EMBL/GenBank/DBJ databases.  
 Ota T.,et al.Nat. Genet. 36:40-45(2004).  
 Grimwood J.,et al.Nature 428:529-535(2004).  
 Mural R.J.,et al.Submitted (JUL-2005) to the EMBL/GenBank/DBJ databases.

## Images

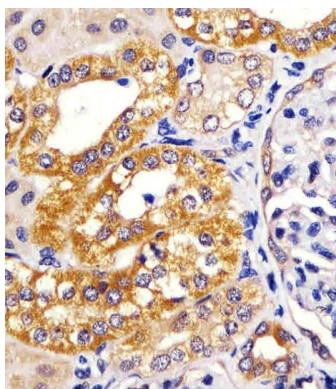
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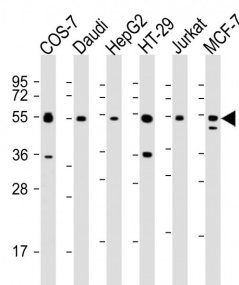
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human cervical epithelial adenocarcinoma cell line) cells labeling IRF3 with AM8483b at 1/25 dilution, followed by Dylight® 488-conjugated goat anti-mouse IgG (NA166821) secondary antibody at 1/200 dilution (green). Immunofluorescence image showing cytoplasm staining on HeLa cell line. Cytoplasmic actin is detected with Dylight® 554 Phalloidin (PD18466410) at 1/100 dilution (red). The nuclear counter stain is DAPI (blue).



Overlay histogram showing Jurkat cells stained with AM8483b (green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then incubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AM8483b, 1:25 dilution) for 60 min at 37°C. The secondary antibody used was Goat-Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed (NA168821) at 1/400 dilution for 40 min at 37°C. Isotype control antibody (blue line) was mouse IgG (1 µg/1x10<sup>6</sup> cells) used under the same conditions. Acquisition of >10,000 events was performed.



AM8483b staining IRF3 in human kidney sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0.5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hour at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



All lanes : Anti-IRF3 Antibody at 1:2000 dilution  
 Lane 1: COS-7 whole cell lysate  
 Lane 2: Daudi whole cell lysate  
 Lane 3: HepG2 whole cell lysate  
 Lane 4: HT-29 whole cell lysate  
 Lane 5: Jurkat whole cell lysate  
 Lane 6: MCF-7 whole cell lysate  
 Lysates/proteins at 20 µg per lane.  
 Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 47 kDa  
 Blocking/Dilution buffer: 5% NFDM/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.