

**IRF3 Antibody**  
**Catalog # ASC10270**

## Specification

## IRF3 Antibody - Product Information

|                   |   |
|-------------------|---|
| Application       | WB, IHC-P, IF, E  |
| Primary Accession | <a href="#">Q14653</a>  |
| Other Accession   | <a href="#">NP_001562</a> , <a href="#">4504725</a>   |
| Reactivity        | Human, Mouse  |
| Host              | Rabbit  |
| Clonality         | Polyclonal  |
| Isotype           | IgG   |
| Calculated MW     | 43, 47, 50 kDa KDa  |
| Application Notes | IRF3 antibody can be used for detection of IRF3 by Western blot at 1 - 4 µg/mL. Antibody can also be used for immunohistochemistry starting at 2 µg/mL. For immunofluorescence start at 20 µg/mL. |

### IRF3 Antibody - Additional Information

Gene ID **3661**

**Other Names**

IRF3 Antibody: Interferon regulatory factor 3, IRF-3, interferon regulatory factor 3

## Target/Specificity

IRF3; At least three isoforms of IRF3 are known to exist.

## Reconstitution & Storage

IRF3 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

## Precautions

IRF3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## IRF3 Antibody - 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="http://www.uniprot.org/citations/22394562" target="\_blank">22394562</a>, PubMed:<a href="http://www.uniprot.org/citations/24049179" target="\_blank">24049179</a>, PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>, PubMed:<a href="http://www.uniprot.org/citations/27302953" target="\_blank">27302953</a>, PubMed:<a href="http://www.uniprot.org/citations/31340999" target="\_blank">31340999</a>, PubMed:<a

href="http://www.uniprot.org/citations/36603579" target="\_blank">36603579</a>, PubMed:<a href="http://www.uniprot.org/citations/8524823" target="\_blank">8524823</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:<a href="http://www.uniprot.org/citations/11846977" target="\_blank">11846977</a>, PubMed:<a href="http://www.uniprot.org/citations/16846591" target="\_blank">16846591</a>, PubMed:<a href="http://www.uniprot.org/citations/16979567" target="\_blank">16979567</a>, PubMed:<a href="http://www.uniprot.org/citations/20049431" target="\_blank">20049431</a>, PubMed:<a href="http://www.uniprot.org/citations/32972995" target="\_blank">32972995</a>, PubMed:<a href="http://www.uniprot.org/citations/36603579" target="\_blank">36603579</a>, PubMed:<a href="http://www.uniprot.org/citations/8524823" target="\_blank">8524823</a>). 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:<a href="http://www.uniprot.org/citations/16846591" target="\_blank">16846591</a>, PubMed:<a href="http://www.uniprot.org/citations/16979567" target="\_blank">16979567</a>, PubMed:<a href="http://www.uniprot.org/citations/20049431" target="\_blank">20049431</a>, PubMed:<a href="http://www.uniprot.org/citations/36603579" target="\_blank">36603579</a>). 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:<a href="http://www.uniprot.org/citations/22394562" target="\_blank">22394562</a>, PubMed:<a href="http://www.uniprot.org/citations/25636800" target="\_blank">25636800</a>, PubMed:<a href="http://www.uniprot.org/citations/27302953" target="\_blank">27302953</a>, PubMed:<a href="http://www.uniprot.org/citations/36603579" target="\_blank">36603579</a>). 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:<a href="http://www.uniprot.org/citations/16154084" target="\_blank">16154084</a>, PubMed:<a href="http://www.uniprot.org/citations/27302953" target="\_blank">27302953</a>, PubMed:<a href="http://www.uniprot.org/citations/33440148" target="\_blank">33440148</a>, PubMed:<a href="http://www.uniprot.org/citations/36603579" target="\_blank">36603579</a>). Can activate distinct gene expression programs in macrophages and can induce significant apoptosis in primary macrophages (PubMed:<a href="http://www.uniprot.org/citations/16846591" target="\_blank">16846591</a>). 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:<a href="http://www.uniprot.org/citations/25609812" target="\_blank">25609812</a>). Key transcription factor regulating the IFN response during SARS-CoV-2 infection (PubMed:<a href="http://www.uniprot.org/citations/33440148" target="\_blank">33440148</a>).

### 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.

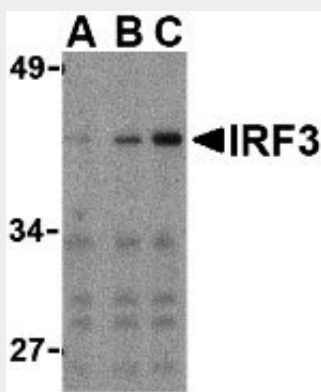
### IRF3 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

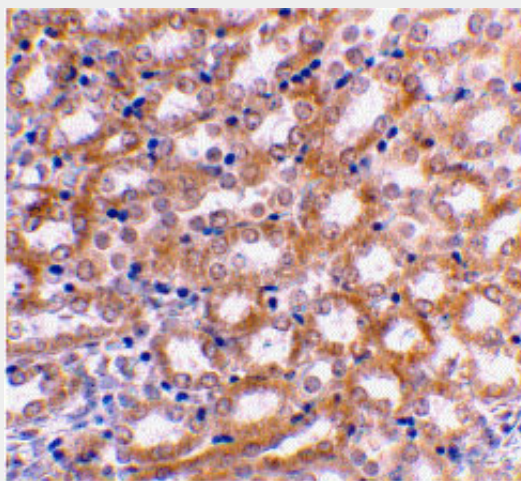
- [Western Blot](#)
- [Blocking Peptides](#)

- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

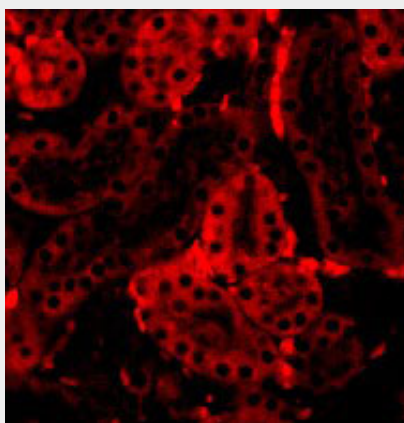
### IRF3 Antibody - Images



Western blot analysis of IRF3 in Ramos whole cell lysate with IRF3 antibody at (A) 1, (B) 2, and (C) 4 µg/mL.



Immunohistochemical staining of mouse kidney using IRF3 antibody at 2 µg/mL.



Immunofluorescence of IRF3 in Mouse Kidney cells with IRF3 antibody at 20 µg/mL.

### **IRF3 Antibody - Background**

IRF3 Antibody: Interferons (IFN)s are involved in a multitude of immune interactions during viral infections and play a major role in both the induction and regulation of innate and adaptive antiviral mechanisms. During infection, host-virus interactions signal downstream molecules such as transcription factors such as IFN regulatory factor-3 (IRF3) which can act to stimulate transcription of IFN-alpha/beta genes. IRF3 is present in an inactive form in the cytoplasm of most cells. Following viral infection, IRF3 can be activated by IκB kinase-ε and TANK-binding kinase 1 (TBK1), whereupon IRF3 translocates to the nucleus. IRF3 can also be activated by stimulation of toll-like receptor 3 (TLR3) by dsRNA. IRF3 exists as at least two distinct isoforms.

### **IRF3 Antibody - References**

Malmgaard L. Induction and regulation of IFNs during viral infections. J. Interferon & Cyto. Res. 2004; 24:439-54

Au WC, Moore PA, Lowther W, et al. Identification of a member of the interferon regulatory factor family that binds to the interferon-stimulated response element and activates expression of interferon-induced genes. Proc. Natl. Acad. Sci. USA 1995; 92:11657-61.

Fitzgerald KA, McWhirter SM, Faia KL, et al. IKKε and TBK1 are essential components of the IRF3 signaling pathway. Nat. Immunol. 2003; 4:491-6.

Sharma S, Tenover BR, Grandvaux N, et al. Triggering the interferon antiviral response through an IKK-related pathway. Science 2003; 300:1148-51.