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IRF7 Antibody

Catalog # ASC10461

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q92985
Other Accession	Q92985, 116242593
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	54278
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IRF7 antibody can be used for detection of IRF7 by Western blot at 0.5 - 1 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	3665
Other Names	IRF7 Antibody: IRF7A, IRF7B, IRF7C, IRF7H, IRF-7H, Interferon regulatory factor 7, IRF-7, interferon regulatory factor 7
Target/Specificity	IRF7;
Reconstitution & Storage	IRF7 antibody can be stored at 4℃ for three months and -20℃, 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	IRF7 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IRF7
Function	Key transcriptional regulator of type I interferon (IFN)- dependent immune responses and plays a critical role in the innate immune response against DNA and RNA viruses (PubMed:28342865, PubMed:28768858). 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:17574024, PubMed:32972995). Can efficiently activate both the IFN-beta (IFNB) and the IFN-alpha (IFNA) genes and mediate their induction via both the virus-activated, MyD88-independent pathway and the TLR-activated, MyD88-dependent pathway. Induces transcription of

	ubiquitin hydrolase USP25 mRNA in response to lipopolysaccharide (LPS) or viral infection in a type I IFN-dependent manner (By similarity). Required during both the early and late phases of the IFN gene induction but is more critical for the late than for the early phase. Exists in an inactive form in the cytoplasm of uninfected cells and following viral infection, double-stranded RNA (dsRNA), or toll-like receptor (TLR) signaling, becomes phosphorylated by IKBKE and TBK1 kinases. This induces a conformational change, leading to its dimerization and nuclear localization where along with other coactivators it can activate transcription of the type I IFN and ISG genes. Can also play a role in regulating adaptive immune responses by inducing PSMB9/LMP2 expression, either directly or through induction of IRF1. Binds to the Q promoter (Qp) of EBV nuclear antigen 1 a (EBNA1) and may play a role in the regulation of EBV latency. Can activate distinct gene expression programs in macrophages and regulate the anti- tumor properties of primary macrophages (By similarity) (PubMed:11073981, PubMed:12374802, PubMed:15361868, PubMed:17404045).
Cellular Location	Nucleus. Cytoplasm. Note=The phosphorylated and active form accumulates selectively in the nucleus
Tissue Location	Expressed predominantly in spleen, thymus and peripheral blood leukocytes

Background

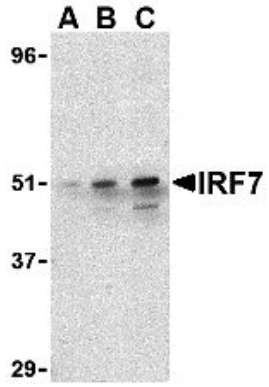
IRF7 Antibody: Interferons (IFNs) are involved in a multitude of immune interactions during viral infections and play a major role in both the induction and regulation of innate and adaptive antiviral mechanisms. During infection, host-virus interactions signal downstream molecules such as transcription factors such as IFN regulatory factor-3 (IRF3) which can act to stimulate transcription of IFN-a/b genes. IRF7 has been shown to play a role in the transcriptional activation of virus-inducible cellular genes, including interferon beta chain genes. IRF7 play a major role in the innate immune pathway, interacting with the Toll-like receptor (TLR) adaptor proteins MyD88 and Tirp/TRAM and functioning as an intermediate TLR4 and TLR9 signaling. There are at least four differentially spliced isoforms of IRF7, although their function has not been clearly established.

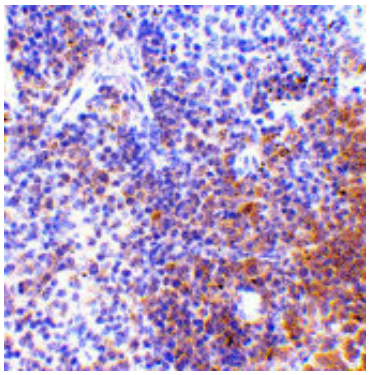
References

Malmgaard L. Induction and regulation of IFNs during viral infections. J. Interferon & Cyto. Res. 2004; 24:439-54.
Sato M, Suemori H, Hata N, et al. Distinct and essential roles of transcription factors IRF-3 and IRF-7 in response to viruses for IFN-alpha/beta gene induction. Immunity 2000; 13:539-48.
Fitzgerald KA, Rowe DC, Barnes BJ, et al. LPS-TLR4 signaling to IRF-3/7 and NF-kappaB involves the toll adaptors TRAM and TRIF. J. Exp. Med. 2003; 198:1043-55.
Honda K, Yanai H, Mizutani T, et al. Role of a transductional-transcriptional processor complex involving MyD88 and IRF-7 in Toll-like receptor signaling. Proc. Natl. Acad. Sci. USA 2004; 101:15416-21.

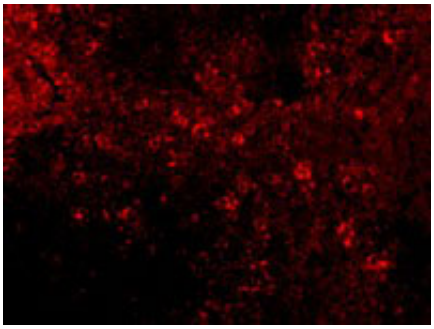
Images

Western blot analysis of IRF7 in 293 whole cell lysate with IRF7 antibody at (A) 0.5, (B) 1, and (C) 2 µg/mL.





Immunohistochemistry of IRF7 in mouse spleen tissue with IRF7 antibody at 5 µg/mL.



Immunofluorescence of IRF7 in Mouse Spleen cells with IRF7 antibody at 20 µg/mL.