Revision 4

#8478 Store at -20C

IRF-1 (D5E4) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-Bond, IHC-P, IF-IC, FC-FP, C&R	H M R	Endogenous	45-48	Rabbit IgG	#P10914	3659

Product Usage Information

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
IHC Leica Bond	1:50
Immunohistochemistry (Paraffin)	1:100
Immunofluorescence (Immunocytochemistry)	1:200
Flow Cytometry (Fixed/Permeabilized)	1:50
CUT&RUN	1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

IRF-1 (D5E4) XP® Rabbit mAb recognizes endogenous levels of total IRF-1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro261 of human IRF-1 protein.

Background

Interferon regulatory factors (IRFs) comprise a family of transcription factors that function within the Jak/Stat pathway to regulate interferon (IFN) and IFN-inducible gene expression in response to viral infection (1). IRFs play an important role in pathogen defense, autoimmunity, lymphocyte development, cell growth, and susceptibility to transformation. The IRF family includes nine members: IRF-1, IRF-2, IRF-9/ISGF3γ, IRF-3, IRF-4 (Pip/LSIRF/ICSAT), IRF-5, IRF-6, IRF-7, and IRF-8/ICSBP. All IRF proteins share homology in their amino-terminal DNA-binding domains. IRF family members regulate transcription through interactions with proteins that share similar DNA-binding motifs, such as IFN-stimulated response elements (ISRE), IFN consensus sequences (ICS), and IFN regulatory elements (IRF-E) (2).

The IRF-1 transcription factor was originally identified as a regulator of virus-inducible enhancer-like elements of the IFN-β gene (3). IRF-1 is widely expressed and upregulated by viral infection or stimulation with IFN or other cytokines. IRF-1 is serine-phosphorylated by casein kinase II (CKII) at two clustered sites, one in the DNA-binding domain (amino acids 138-150) and another in the transactivation domain (amino acids 219-231) (4). Mutation analysis of the latter site suggests that these phosphorylation sites help regulate IRF-1 activity. Tyrosine phosphorylation has also been shown to be important in IFN-γ-mediated differentiation of myeloid cell lines (5). C-terminal SUMOylated IRF-1 inhibits apoptosis in tumor cells by repression of its transcriptional activity (6).

Background References

1. Taniguchi, T. et al. (2001) *Annu Rev Immunol* 19, 623-55.
2. Honda, K. and Taniguchi, T. (2006) *Nat Rev Immunol* 6, 644-58.
3. Fujita, T. et al. (1988) *EMBO J* 7, 3397-405.
4. Lin, R. and Hiscott, J. (1999) *Mol Cell Biochem* 191, 169-80.
5. Kautz, B. et al. (2001) *J Biol Chem* 276, 37868-78.
6. Park, J. et al. (2007) *Proc Natl Acad Sci USA* 104, 17028-33.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IHC-Bond:** IHC Leica Bond
IHC-P: Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry)
FC-FP: Flow Cytometry (Fixed/Permeabilized) **C&R:** CUT&RUN

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses