Anti-ISG15 antibody

Description	Unconjugated Rabbit polyclonal to ISG15

Model	STJ192176
Host	Rabbit
Reactivity	Human, Mouse
Applications	ELISA, WB
Gene ID	9636
Gene Symbol	ISG15
Dilution range	WB 1:500-2000 ELISA 1:5000-20000
Specificity	ISG15 Polyclonal Antibody detects endogenous levels of protein.
Tissue Specificity	Detected in lymphoid cells, striated and smooth muscle, several epithelia and neurons. Expressed in neutrophils, monocytes and lymphocytes. Enhanced expression seen in pancreatic adenocarcinoma, endometrial cancer, and bladder cancer, as compared to non-cancerous tissue. In bladder cancer, the increase in expression exhibits a striking positive correlation with more advanced stages of the disease.
Purification	ISG15 antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Ubiquitin-like protein ISG15 Interferon-induced 15 kDa protein Interferon-induced 17 kDa protein IP17 Ubiquitin cross-reactive protein hUCRP
Molecular Weight	18 kDa

Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid form in PBS containing 50% glycerol,and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:4053OMIM:147571
Alternative Names	Ubiquitin-like protein ISG15 Interferon-induced 15 kDa protein Interferon-induced 17 kDa protein IP17 Ubiquitin cross-reactive protein hUCRP
Function	Ubiquitin-like protein which plays a key role in the innate immune response to viral infection either via its conjugation to a target protein (ISGylation) or via its action as a free or unconjugated protein. ISGylation involves a cascade of enzymatic reactions involving E1, E2, and E3 enzymes which catalyze the conjugation of ISG15 to a lysine residue in the target protein. Its target proteins include IFIT1, MX1/MxA, PPM1B, UBE2L6, UBA7, CHMP5, CHMP2A, CHMP4B and CHMP6. Can also isgylate: EIF2AK2/PKR which results in its activation, DDX58/RIG-I which inhibits its function in antiviral signaling response, EIF4E2 which enhances its cap structure-binding activity and translation-inhibition activity, UBE2N and UBE2E1 which negatively regulates their activity, IRF3 which inhibits its ubiquitination and degradation and FLNB which prevents its ability to interact with the upstream activators of the JNK cascade therby inhibiting IFNA-induced JNK signaling. Exhibits antiviral activity towards both DNA and RNA viruses, including influenza A, HIV-1 and Ebola virus. Restricts HIV-1 and ebola virus via disruption of viral budding. Inhibits the ubiquitination of HIV-1 Gag and host TSG101 and disrupts their interaction, thereby preventing assembly and release of virions from infected cells. Inhibits Ebola virus budding mediated by the VP40 protein by disrupting ubiquitin ligase activity of NEDD4 and its ability to ubiquitinate VP40. ISGylates influenza A virus NS1 protein which causes a loss of function of the protein and the inhibition of virus replication. The secreted form of ISG15 can: induce natural killer cell proliferation, act as a chemotactic factor for neutrophils and act as a IFN-gamma-inducing cytokine playing an essential role in antimycobacterial immunity.
Sequence and Domain Family	Both the Ubiquitin-like 1 and Ubiquitin-like 2 domains are required for its efficient conjugation to cellular proteins. The two domains play different roles in the ISGylation pathway: Ubiquitin-like 2 domain is necessary for the first two steps allowing the linking of ISG15 to the E1 and E2 enzymes while Ubiquitin-like 1 domain is essential for the final, E3-mediated transfer of ISG15, from the E2 to the Lys of the target protein .
Cellular Localization	Cytoplasm Secreted. Exists in three distinct states: free within the cell, released into the extracellular space, or conjugated to target proteins.
Post-translational Modifications	S-nitrosylation decreases its dimerization, thereby increasing the availability as well as the solubility of monomeric ISG15 for its conjugation to cellular proteins. Induced as an inactive, precursor protein that is cleaved by specific proteases to expose the C-terminal diglycine (LRLRGG) motif. This motif is essential not only for its conjugation to substrates but also for its recognition by the relevant processing proteases.

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