

PRODUCT INFORMATION



ISG15 (mature form) (human, recombinant)

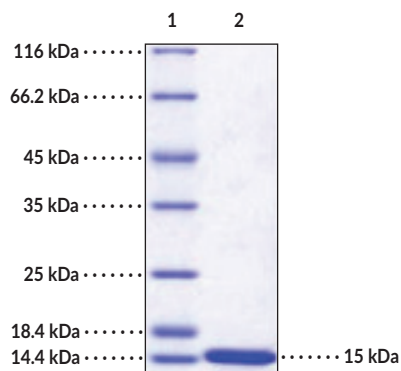
Item No. 35599

Overview and Properties

Synonyms:	Interferon-induced 15 kDa Protein, Interferon-induced 17 kDa Protein, Interferon-stimulated Gene 15, IP17, Ubiquitin Cross-reactive Protein, Ubiquitin-like Protein ISG15, UCRP
Source:	Recombinant human ISG15 expressed in <i>E. coli</i>
Amino Acids:	1-157
Uniprot No.:	P05161
Molecular Weight:	17.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 50 mM Tris, pH 8.0. It is recommended to reconstitute with sterile deionized water to 0.53 mg/ml and avoid freeze/thaw cycles by aliquoting protein.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: ISG15 (mature form)

SDS-PAGE Analysis of ISG15 (mature form). This protein has a calculated molecular weight of 17.2 kDa. It has an apparent molecular weight of approximately 15 kDa by SDS-PAGE under reducing conditions.

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Interferon-stimulated gene 15 (ISG15) is a ubiquitin-like (Ubl) protein found only in vertebrates.^{1,2} The mature form of ISG15 is composed of an N-terminal Ubl and a C-terminal Ubl with an LRLRGG conjugation sequence at the C-terminus.² It is expressed in lymphoid cells, epithelial cells, neurons, and skeletal and smooth muscle, and its expression is induced by type I interferon signaling in response to viral or bacterial infection but is also induced in response to the aging process and certain diseases.¹⁻³ ISG15 is primarily localized intracellularly conjugated to lysine residues in newly synthesized proteins via ISGylation, a process that can enhance antiviral responses.¹ It also exists in a free form that can be secreted by a variety of cells, including fibroblasts, monocytes, and lymphocytes, and binds to the adhesion molecule lymphocyte function-associated antigen-1 (LFA-1) on leukocytes to increase the secretion of IFN- γ . ISG15 can ISGylate viral proteins to prevent viral replication and inhibit the function of viral proteins, however ISGylation on host proteins can be reversed by certain viruses, including severe acute respiratory coronavirus 2 (SARS-CoV-2), leading to suppression of the host innate immune response.^{1,4,5} Patients deficient in functional ISG15 due to inherited mutations in *ISG15* are more resistant to viral infection, but have an increased susceptibility to mycobacterial infection, while *Isg15* knockout mice are more susceptible to viral infection, indicating species-specific differences.^{6,7} Cayman's ISG15 (mature form) (human, recombinant) protein consists of 157 amino acids and has a calculated molecular weight of 17.2 kDa. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 15 kDa.

References

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7. Bogunovic, D., Byun, M., Durfee, L.A., *et al.* Mycobacterial disease and impaired IFN- γ immunity in humans with inherited ISG15 deficiency. *Science* **337**(6102), 1684-1688 (2012).

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