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MATERIAL DATA SHEET

Recombinant Human His6-Pro ISG15/UCRP
Cat. # UL-620

Interferon-stimulated Gene 15 (ISG15), also known as Ubiquitin Cross-reacting Protein (UCRP), is a Ubiquitin-like protein that is covalently coupled to target proteins in a process termed ISGylation. It is a 165 amino acid (aa) polypeptide with a predicted molecular weight of 18 kDa. ISG15/UCRP exhibits 66% aa sequence identity with its mouse ortholog. Structurally, ISG15/UCRP consists of two tandem Ubiquitin-like domains that share a similar 3-dimensional structure with Ubiquitin and other Ubiquitin-like modifiers including NEDD8 and SUMO1. Modification of targets by ISG15/UCRP occurs in a stepwise enzymatic process similar to that of Ubiquitin. Enzymes regulating ISGylation include the activating (E1) enzyme UBE1L, the conjugating (E2) enzyme UbcH8, and ligases (E3) such as EFP/TRIM25 and HERC5 (1-4). Removal of ISG15/UCRP is catalyzed by the deconjugating enzyme UBP43/USP18 (5). Functionally, ISG15/UCRP has putative roles in the immune response and tumorigenesis. This is reflected by intracellular ISG15/UCRP targets that include Cyclin D1, tumor suppressor p63, IRF3, and a range of viral proteins (6-8). It is induced by type 1 interferons and microbial infection, and knockout mice exhibit an increased sensitivity to infection by some viruses (6). ISG15/UCRP can also be secreted by cells of the immune system and may act in a cytokine-like manner (9). For instance, it is produced by human granulocytes in response to mycobacterium exposure, and natural killer cells and T cells respond to extracellular ISG15/UCRP with IFN-gamma production (10). Further supporting a role in immune function, ISG15/UCRP mutations are associated with MSMD, an inherited disorder characterized by increased susceptibility to mycobacterial infection (10

Pro-ISG15 (165 amino acids) is the inactive precursor of ISG15 (163 amino acids).The precursor is processed at the C-terminus by an ISG15-specific protease UBP43 (also knownas USP18). The mature form of ISG15 contains the conserved C-terminal di-glycine residueswhich are critical in activation and conjugation reactions. This protein can be used as a negative control in ISGylation reactions or as a substrate for UBP43.Note: His6 tag is on the C-terminus of the protein.

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Product Information

Quantity: 500 µg

MW: 19 kDa

Source: *E. coli*-derived human ISG15/UCRP protein
Contains a C-terminal 6-His tag
Accession # P05161

Stock: Supplied as a solution in HEPES and NaCl.

Purity: >95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain.

Use & Storage

Use: Bioassay data are not available.

Storage: **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -70 °C as supplied.
- 3 months, -70 °C under sterile conditions after opening.

Literature

References:

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