Recombinant Human ISG15 Activating Enzyme/UBE1L
Cat. # E-309

Interferon-stimulated Gene 15 (ISG15) Activating Enzyme (E1), also known as Ubiquitin-activating Enzyme 1-like (UBE1L), UBA7, and UBE2, is a 1012 amino acid (aa) member of the Ubiquitin-activating enzyme family with a predicted molecular weight of 111 kDa. The mouse and rat ISG15 E1/UBE1L orthologs share 80% aa sequence identity with the human protein. ISG15 E1/UBE1L catalyzes the activation of the C-terminal carboxyl group of the small Ubiquitin-like modifier ISG15. Like other E1 enzymes, ISG15 E1/UBE1L contains a conserved ATP-binding domain and an active site cysteine residue, Cys599 in humans. It is expressed in multiple tissues in response to IFN-alpha or -beta, but the covalent attachment of ISG15 to protein substrates (ISGylation) is not required for IFN-alpha or -beta signaling (1,2). In addition, ISG15 E1/UBE1L knockout mice appear to have normal embryonic development and fertility (2). However, it has been suggested that ISG15 E1/UBE1L may play a role in viral immunity as these knockout mice demonstrate increased susceptibility to influenza infection (3). ISG15 E1/UBE1L has also been shown to modulate erythroid differentiation and mediate retinoid-induced differentiation of acute promyelocytic leukemia cells (4,5). ISG15 E1/UBE1L is downregulated in lung cancer and has been shown to downregulate Cyclin D in lung cancer cells (6,7).

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**Use & Storage**

**Use:** Recombinant Human ISG15 Activating Enzyme is a member of the ISG15-activating (E1) enzyme family that is required for the first step of the enzymatic cascade that subsequently utilizes an ISG15-conjugating (E2) enzyme and an ISG15 ligase (E3) to conjugate ISG15 to substrate proteins. Reaction conditions will need to be optimized for each specific application. We recommend an initial Recombinant Human ISG15 Activating Enzyme concentration of 50-200 nM.

**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:**

_for research use only. Not for use in humans._