

**DESCRIPTION**

**Source** Chinese Hamster Ovary cell line, CHO-derived human ITIH5 protein  
Ser17-Leu942 with a C-terminal 6-His tag  
Accession # NP\_085046.5

**N-terminal Sequence Analysis** Ser17

**Predicted Molecular Mass** 104 kDa

**SPECIFICATIONS**

**SDS-PAGE** 110-122 kDa, under reducing conditions

**Activity** Measured by its binding ability in a functional ELISA.  
When Recombinant Human ITIH5 His-tag Protein is coated at 2.00 µg/mL (100 µL/well), it binds to Recombinant Human TSG-6 (Catalog # 2104-TS). The ED<sub>50</sub> for this binding is 1.00-10.0 µg/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Supplied as a 0.2 µm filtered solution in Tris and NaCl. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

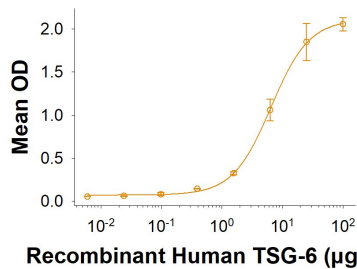
**Shipping** The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

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

- 6 months from date of receipt, -70 °C as supplied.
- 2 weeks, 2 to 8 °C under sterile conditions after opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

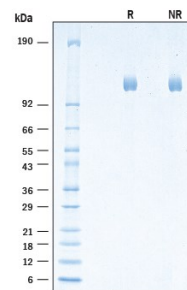
**DATA**

**Binding Activity**



**Recombinant Human ITIH5 His-tag Protein Binding Activity.** When Recombinant Human ITIH5 His-tag Protein (Catalog # 11009-IT) is coated at 2.00 µg/mL (100 µL/well), it binds to Recombinant Human TSG-6 (Catalog # 2104-TS). The ED<sub>50</sub> for this binding is 1.00-10.0 µg/mL.

**SDS-PAGE**



**Recombinant Human ITIH5 His-tag Protein SDS-PAGE.** 2 µg/lane of Recombinant Human ITIH5 His-tag Protein (Catalog # 11009-IT) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 110-122 kDa.

**BACKGROUND**

Inter-alpha-trypsin inhibitor heavy chain 5 (ITIH5) is a heavy chain (HC) member of the ITIH family with predominant expression in the placenta, mammary gland, and ovary (1). It is composed of an N-terminal signal sequence, vault protein inter-alpha-trypsin domain (VIT), von-Willebrand type A domain, C-terminal cleavage site and multicopper oxidase domain conserved within other HCs in the family (1). The cleavage site present in ITIH members is processed during chain assembly (1) to reveal a C-terminal aspartic acid residue that enables crosslinking of the HC directly to chondroitin sulfate (CS) and hence to bikunin (2, 3). ITIHs can alternatively be associated with hyaluronan (HA) to form a Serum-derived hyaluronan associated protein (SHAP)-hyaluronan (HA) complex known to assist in stabilizing HA-rich extracellular matrices in inflammatory processes (3, 4). ITIH5 has been reported to modulate inflammation in skin disease and obesity and was suggested to play an important role more broadly in inflammation through its interaction with HA (5, 6). Tumor necrosis factor-stimulated gene 6 (TSG-6)-mediates interactions with the ITIH5 to enable the transfer of HC to HA matrix by forming a TSG-6:HC complex (7,8) that can facilitate Tumor Growth Factor  $\beta$ 1 (TGF $\beta$ 1)-dependent myofibroblast differentiation (9). ITIH5 has also been reported as downregulated or epigenetically silenced in several invasive cancers with poor prognosis including lung adenocarcinoma, breast cancer, gastric cancer, bladder cancer, and melanoma highlighting its potential as a therapeutic target (1, 10-12).

**References:**

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