Recombinant Human ITIH1 His-tag

Catalog Number: 10268-IT

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human ITIH1 protein Ser30-Asp672, with a C-terminal 6-His tag Accession # P19827-1
N-terminal Sequence Analysis	Ser30
Predicted Molecular Mass	73 kDa

SPECIFICATIONS

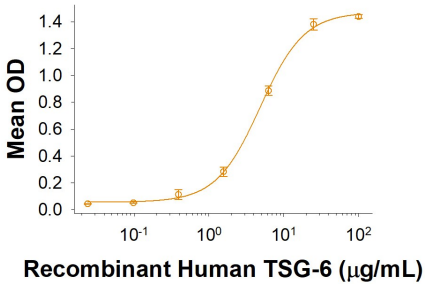
SDS-PAGE	79-82 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human ITIH1 is immobilized at 2 µg/mL (100 µL/well), the concentration of Recombinant Human TSG-6 (Catalog # 2104-TS) that produces 50% of the optimal binding response is 1-6 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	Lyophilized from a 0.2 µm filtered solution in Tris and NaCl. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

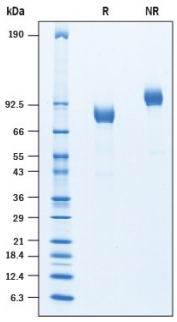
DATA

Binding Activity



When Recombinant Human ITIH1 (Catalog # 10268-IT) is coated at 2 µg/mL, 100 µL/well, Recombinant Human TSG-6 (Catalog # 2104-TS) binds with an ED_{50} of 1-6 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Human ITIH1 His-tag was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing a band at 80 kDa under reducing conditions.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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BACKGROUND

Inter-alpha-trypsin inhibitor heavy chain 1 (ITIH1) is a heavy chain (HC) member of the ITIH family that is synthesized in the liver and circulates in the plasma (1). ITIH1 contains a signal sequence, propeptide, and a conserved von-Willebrand type A domain as in other HCs in the family. ITIH1 also includes a c-terminal extension multicopper oxidase domain, present in ITIH3 as well, that is trimmed to reveal a c-terminal aspartic acid residue that enables crosslinking of the HC to chondroitin sulfate (CS) (1,2). ITIH1 represents the HC1 component of Inter-α-inhibitor. Inter-α-inhibitor is a protease inhibitor composed of three subunits (HC1, HC2, and bikunin), which are linked together via a CS moiety (1,3). ITIH1 can alternatively be associated with hyaluronan (HA) to form the Serum-derived hyaluronan associated protein (SHAP)-hyaluronan (HA) complex known to assist in stabilizing HA-rich extracellular matrices in the context of inflammatory processes and ovulation (3,4). Tumor necrosis factor-stimulated gene-6 (TSG-6) has high affinity for heavy chains and plays an important role in the transfer of HC to HA matrix by forming a TSG-6:HC complex intermediate required for the transfer (4,5). Inter-α-inhibitor heavy chains potentiate CD-44-mediated leukocytes adhesion to hyaluronan substratum and recruit immune cells to sites of inflammation (6). The SHAP-HA complex was found to be upregulated in patients at various clinical stages of chronic hepatitis (CH), liver cirrhosis (LC), and hepatocellular carcinoma (HCC) caused by infection with the hepatitis C or hepatitis B virus (7). ITIH1 has been shown to increase cell attachment and reduce the number of metastases in an antitumoral role (8).

References:

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