Recombinant Human Pentraxin 3/TSG-14 His-tag

Catalog Number: 10292-TS

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human Pentraxin 3/TSG-14 protein Glu18-Ser381, with a C-terminal 6-His tag Accession # P26022
N-terminal Sequence Analysis	Glu18
Structure / Form	Multimer consisting of as many as ten non-covalently and covalently linked subunits.
Predicted Molecular Mass	41 kDa

SPECIFICATIONS

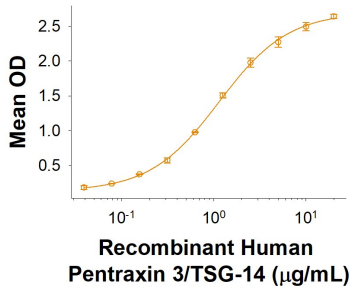
SDS-PAGE	38-55 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Human C1q is immobilized at 5 µg/mL (100 µL/well), Recombinant Human Pentraxin 3/TSF-14 His-tag (Catalog # 10292-TS) binds with an ED_{50} of 0.5-4 µg/mL.
Endotoxin Level	<0.10 EU per 1 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 PBS with Trehalose. 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



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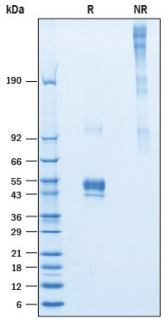
SDS-PAGE



2 µg/lane of Recombinant Human Pentraxin 3/TSG-14 His-tag (Catalog # 10292-TS) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 38-55 kDa under reducing condition.

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BACKGROUND

Pentraxin 3 (PTX3), TSG-14, was initially identified as a TNF-α or IL-1β inducible gene (1-3). It belongs to the pentraxin family, which was named originally for the homo-pentameric structure formed by its members (4). The pentraxin family is divided into two subfamilies: the “short” and the “long” pentraxins with approximate molecular weights of 25 kDa and 50 kDa, respectively. TSG-14 is a member of the long pentraxin subfamily, which also includes the *Xenopus laevis* XL-PXN1, the guinea pig apexin/p50, the rat neuronal pentraxin I (NPI) and NPR, the human neuronal pentraxin II (NPTX2) and the human neuronal activity-related pentraxin (5). Mature secreted TSG-14 contains a pentaxin-like domain at its carboxy-terminus that shares 23-28% amino acid (aa) sequence similarity to C-reactive protein (CRP) and serum amyloid P component (SAP), which belongs to the short pentraxin subfamily. However, the N-terminal sequence of TSG-14 does not share aa sequence homology with any of the “short” pentaxins (3). Unlike CRP and SAP, which forms pentamers only, TSG-14 forms both pentameric and higher ordered oligomers (5). Similarly to CRP and SAP, TSG-14 binds to the complement cascade component C1q (6). However, TSG-14 does not bind to phosphoethanolamine, phosphocholine, or high pyruvate agarose, which are known ligands for CRP and SAP. TSG-14 is a marker of the acute phase response and is highly expressed in advanced atherosclerotic plaques (12). While CRP and SAP are primarily produced in the liver, TSG-14 expression is strongly upregulated by TNF-α, IL-1β, and bacterial LPS in peripheral fibroblasts, endothelial cells, and macrophages (7). At the amino acid level, human and mouse TSG-14 share 88% aa sequence homology (8). TSG-14 concentration is elevated in the joint fluid of patients with rheumatoid arthritis (RA), indicating that TSG-14 may be a potential mediator of immune response (9). TSG-14 may also function in the regulation of the uptake and clearance of apoptotic cells by dendritic cells (10). *In vivo* study showed that TSG-14 transgenic mice are more resistant to sepsis and endotoxemia compared to wild type during the inflammatory injury (11). Increased expression of TSG-14 may enhance the immune response to protect the host from infection.

References:

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