

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Glu18-Ser381, with a C-terminal 6-His tag Accession # P48759
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 (monomer)

SPECIFICATIONS

SDS-PAGE	46 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized rC1q at 5 µg/mL (100 µL/well) can bind rmPentraxin 3 with a linear range of 0.25-15 µg/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in MOPS, NaCl and CaCl ₂ . See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 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. <ul style="list-style-type: none"> ● 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.

BACKGROUND

Pentraxin 3, also known as 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 PTX3 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 belong 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). Similar 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. 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). An *in vivo* study showed that TSG-14 transgenic mice are more resistant to sepsis and endotoxemia compared to wild-type during inflammatory injury (11). Increased expression of TSG-14 may enhance the immune response to protect the host from infection.

References:

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