Recombinant Human Pentraxin 3/TSG-14

Catalog Number: 1826-TS/CF

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived 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 (monomer)

SPECIFICATIONS

SDS-PAGE	41-50 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Immobilized rhC1q at 5 µg/mL (100 µL/well) can bind rhPentraxin 3 with a linear range of 0.08-5 µg/mL.
Endotoxin Level	<1.0 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. 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.** ● 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 (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:

1. Lee, T.H. *et al.* (1990) Mol. Cell. Biol. **10**:1982.
2. Breviario, F. *et al.* (1992) J. Biol. Chem. **267**:22190.
3. Lee, G.W. *et al.* (1993) J. Immunol**. 150**:1804.
4. Osmand, A.P. *et al.* (1977) Proc. Natl. Acad. Sci. USA **74**:739.
5. Goodman A.R. *et al.* (1996) Cytokine & Growth Factor Reviews **7**:191.
6. Bottazzi, B. *et al.* (1997) J. Biol. Chem. **272**:32817.
7. Introna, M. *et al.* (1996) Blood **87**:1862.
8. Altmeyer, A. *et al.* (1995) J. Biol. Chem. **270**:25584.
9. Luchetti, M.M. *et al.* (2000) Clin. Exp. Immunol. **119**:196.
10. Rovere, P. *et al.* (2000) Blood **96**:4300.
11. Dias, A.A.M. *et al.* (2001) J. Leukocyte Biol. **69**:928.
12. Rolph, M.S. *et al.* (2002) Arterioscler. Throm. Vasc. Biol. **22**:e10-4.

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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