Recombinant Human TSG-6

Catalog Number: 2104-TS

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Trp18-Leu277, with a C-terminal 10-His tag Accession # P98066
N-terminal Sequence Analysis	Trp18
Predicted Molecular Mass	30.5 kDa

SPECIFICATIONS

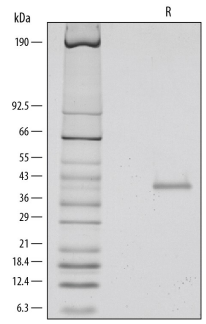
SDS-PAGE	40 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human TSG-6 is present at 0.5 µg/well, the concentration of biotinylated hyaluronan that produces 50% of the optimal binding response is found to be approximately 4-30 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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 with polar packs. 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.

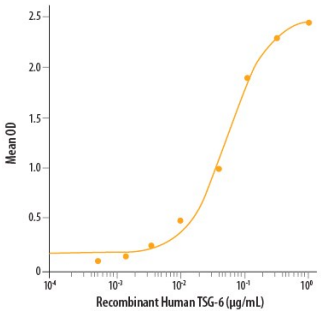
DATA

SDS-PAGE



1 µg/lane of Recombinant Human TSG-6 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 40 kDa.

Binding Activity



Recombinant Human TSG-6 (Catalog # 2104-TS) binds hyaluronan in a functional ELISA. When Recombinant Human TSG-6 is present at 0.5 µg/mL, the concentration of biotinylated hyaluronan that produces 50% of the optimal binding response is approximately 4-30 ng/mL.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

Recombinant Human TSG-6

Catalog Number: 2104-TS

BACKGROUND

TSG-6 (TNF-stimulated gene 6; also TNFIP6) is a secreted, 35-39 kDa group A member of the LINK-Module superfamily of proteins (1 - 4). Human TSG-6 is synthesized as a 277 amino acid (aa) precursor. It contains a 17 aa signal sequence and a 260 aa mature region (5, 6). The mature region shows an N-terminal LINK module (aa 36-129) and a C-terminal CUB (C1s/C1r; urchin embryonic growth factor; BMP1) domain (aa 135-247). Link modules are α-helical, β-sheet structures that bind hyaluronan (HA) and participate in extracellular matrix (ECM) assembly (7). Mature human TSG-6 shares 94% aa identity with both mouse and canine TSG-6. Cells reported to express TSG-6 include activated fibroblasts, synoviocytes, chondrocytes, neutrophils, proximal tubular epithelium, bronchial epithelium, endothelium, and visceral, plus vascular smooth muscle (2, 8). TSG-6 has multiple functions, many of which involve the ECM. It is suggested to stabilize HA-rich ECM. It does so by serving as an intermediary, or link, between the individual subunits of extracellular decameric pentraxin 3 and the surrounding hyaluronan matrix (9). It also provides structure and organization to hyaluronan. This is accomplished by a TSG-6 mediated transfer of an 80-85 kDa HC subunit from IαI (inter-α-inhibitor) to HA. IαI is a four-component, 225 kDa serine protease inhibitor. It contains a protease inhibitor subunit (bikunin), two independent, accompaning protein chains (HC1 and HC2), and a short chondroitin sulfate linking moiety. TSG-6 is a cation-dependent catalyst for the removal, transfer, and subsequent covalent linkage of HC 1/2 to surrounding HA. This provides substance and reinforcement to the ECM (1, 2, 10, 11, 12). The disassembly of IαI also leads to free bikunin, which in the “free” state becomes a potent inhibitor of serine proteases (8).

References:

1. Milner, C.M. *et al.* (2006) Biochem. Soc. Trans. **34**:446.
2. Milner, C.M. and A.J. Day (2003) J. Cell Sci. **116**:1863.
3. Wisnieewski, H-G. and J. Vilcek (2004) Cytokine Growth Factor Rev. **15**:129.
4. Blundell, C.D. *et al.* (2005) J. Biol. Chem. **280**:18189.
5. Lee, T.H. *et al.* (1990) Mol. Cell. Biol. **10**:1982.
6. Lee, T.H. *et al.* (1992) J. Cell Biol. **116**:545.
7. Kohda, D. *et al.* (1996) Cell **86**:767.
8. Forteza, R. *et al.* (2007) Am. J. Respir. Cell Mol. Biol. **36**:20.
9. Salustri, A. *et al.* (2003) Development **131**:1577.
10. Rugg, M.S. *et al.* (2005) J. Biol. Chem. **280**:25674.
11. Sanggaard, K.W. *et al.* (2006) Biochemistry **45**:7661.
12. Sanggaard, K.W. *et al.* (2005) J. Biol. Chem. **280**:11936.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956