

## Active Recombinant Human TWSG1 Protein (211 aa), His-tagged

**Cat. No.** TWSG1-162T    **Lot. No.** (See product label)

### SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b> | Recombinant human Twisted Gastrulation (TSG), produced in HEK 293 cells is a polypeptide chain containing 211 amino acids. A fully biologically active molecule, rhTSG has a molecular mass of 30~33 kDa analyzed by reducing SDS-PAGE and is obtained by chromatographic techniques.                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Species</b>          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Source</b>           | HEK293                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>ProteinLength</b>    | 211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Description</b>      | Twisted gastrulation (TWSG1 or TSG) is a cysteine-rich 24 kDa glycoprotein. It is a secreted BMP binding protein that modulates BMP ligand availability in extracellular space. Human TSG shares 98% aa identity with mouse and rat TSG, and 99.5% aa identity with canine, equine, bovine and porcine TSG. Glycosylation and bioactivity of TWSG1 recombinant proteins vary markedly by cellular source. Non-glycosylated hTWSG1 made in E. coli has both reduced affinity for BMPs, as shown by surface plasmon resonance analysis, and reduced BMP inhibitory activity in a mandibular explant culture system compared to glycosylated proteins made in insect cells or mouse myeloma cells. |
| <b>Form</b>             | Sterile Filtered White lyophilized (freeze-dried) powder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Bio-activity</b>     | Determined by its ability to neutralize BMP-6 induced alkaline phosphatase                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

 Tel: 1-631-559-9269    1-516-512-3133

 Email: [info@creative-biomart.com](mailto:info@creative-biomart.com)     Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

|                       |                                                                                                                                                                                                                                                                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | production by ATDC-5 chondrogenic cells. The ED50 for this effect is < 2 µg/mL of TSG.                                                                                                                                                                             |
| <b>Molecular Mass</b> | 30-33 kDa, observed by reducing SDS-PAGE.                                                                                                                                                                                                                          |
| <b>AA Sequence</b>    | HHHHHHHHHCNKALCASDVSKCLIQELCQCRPGEGNCSCCKECLCLGALWDECC<br>DCVGMCNPRNYSPTPTSKSTVEELHEPIPSLFRALTEGDTQLNWNIVSFPVAEELS<br>HHENLVSFLETVNQPHHQNVSVPNNVHAPYSSDKEHMCCTVVFDDCMSIHQCKIS<br>CESMGASKYRWFHNACCECIGPECIDYGSKTVKCMNCMF                                           |
| <b>Endotoxin</b>      | < 0.2 EU/µg, determined by LAL method.                                                                                                                                                                                                                             |
| <b>Purity</b>         | > 95% as analyzed by SDS-PAGE and HPLC.                                                                                                                                                                                                                            |
| <b>Storage</b>        | Lyophilized recombinant Human Twisted Gastrulation (TSG), remains stable up to 6 months at -80 centigrade from date of receipt. Upon reconstitution, Human Twisted Gastrulation should be stable up to 1 week at 4 centigrade or up to 2 months at -20 centigrade. |
| <b>Storage Buffer</b> | Lyophilized after extensive dialysis against PBS.                                                                                                                                                                                                                  |
| <b>Reconstitution</b> | Reconstituted in ddH <sub>2</sub> O or PBS at 100 µg/mL.                                                                                                                                                                                                           |

## GENE INFORMATION

|                        |                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>       | <b>TWSG1</b> twisted gastrulation homolog 1 (Drosophila) [ Homo sapiens ]                        |
| <b>Official Symbol</b> | <b>TWSG1</b>                                                                                     |
| <b>Synonyms</b>        | TWSG1; twisted gastrulation homolog 1 (Drosophila); twisted gastrulation protein homolog 1; TSG; |

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|----------------|-----------|
| Gene ID        | 57045     |
| mRNA Refseq    | NM_020648 |
| Protein Refseq | NP_065699 |
| MIM            | 605049    |
| UniProt ID     | Q9GZX9    |

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