TWSG1 Protein, Mouse (HEK293, His)

Cat. No.:	HY-P77267
Synonyms:	Twisted Gastrulation Protein Homolog 1; TWSG1; TSG
Species:	Mouse
Source:	HEK293
Accession:	Q9EP52 (C25-F222)
Gene ID:	65960
Molecular Weight:	Approximately 27-33 kDa due to the glycosylation

PROPERTIES

AA Sequence	C N K A L C A S D V S K C L I Q E L C Q C R P G E G N C P C C K E C M L C L G A L W D E C C D C V G M C N P R N Y S D T P P T S K S T V E E L H E P I P S L F R A L T E G D T Q L N W N I V S F P V A E E L S H H E N L V S F L E T V N Q L H H Q N V S V P S N N V H A P F P S D K E R M C T V V Y F D D C M S I H Q C K I S C E S M G A S K Y R W F H N A C C E C I G P E C I D Y G S K T V K C M N C M F
Biological Activity	Measured by its ability to inhibit BMP-6-induced alkaline phosphatase production by ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is 0.8289 μg/mL in the presence of 150 ng/mL of Recombinant Human BMP-6, corresponding to a specific activity is 1.206×10^3 U/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TWSG1 protein is potentially involved in the formation of the dorsoventral axis. It appears to exert its function by counteracting BMP signaling through the formation of ternary complexes with CHRD and BMPs, thereby preventing BMPs from binding to their receptors. Interestingly, TWSG1 exhibits both anti-BMP and pro-BMP activities. It achieves the latter by

cleaving and degrading CHRD, leading to the release of BMPs from the ternary complexes. This dual role suggests that TWSG1 may be a crucial regulator of BMP-mediated processes, particularly in cartilage development and chondrocyte differentiation. Additionally, it may also play a role in thymocyte development. TWSG1 interacts with CHRD and/or BMP4, enhancing the formation of CHRD/BMP4 complexes, and it also interacts with BMP7. Further investigations are needed to fully comprehend the precise mechanisms and signaling pathways through which TWSG1 operates.

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