



## Stanniocalcin 1 Human HEK293

### Product Data Sheet

**Type:** Recombinant  
**Source:** HEK293  
**Species:** Human  
**Other names:** STC1, STC

**Cat. No.:**  
RD172095020 (0.02 mg)  
RD172095100 (0.1 mg)

### Description

Total 240 AA. Mw: 25.9 kDa (calculated). C-Terminal Flag-tag, 10AA (highlighted). The AA sequence is identical to Swiss-Prot-P52823.

### Introduction to the Molecule

Stanniocalcin 1 (STC1) is the mammalian homologue of STC, which was originally identified as a calcium/phosphate-regulating hormone in bony fishes. In contrast, STC1 may play an autocrine and paracrine role with pleiotropic effects in mammals. It is expressed in a wide variety of tissues, but is not detected in the circulation under normal circumstances. Most likely, this is because it attaches to soluble and tethered forms of a high-affinity binding protein. STC-1 can affect calcium homeostasis, bone and muscle mass and structure, and angiogenesis through effects on osteoblasts, osteoclasts, myoblasts/myocytes, and endothelial cells in mice. Differential regulation of myocardial STC1 protein expression was recorded during heart failures. In addition, STC1 may regulate calcium currents in cardiomyocytes and may contribute to the alterations in calcium homeostasis of the failing heart. STC1 was found to be a selective modulator of hepatocyte growth factor (HGF)-induced endothelial migration and morphogenesis, an inhibitor of macrophage chemotaxis and chemokinesis, suppressor of progesterone and luteinization inhibitor. Together with STC-2, it may play important roles in the processes of implantation and decidualization in rats. In terminally differentiated adipocytes, it may function as a "survival factor", which contributes to the maintenance of the integrity of mature adipose tissue. In context with its possible role in gestation, a Big STC, a three higher-molecular-mass variant has been described. STC1 was identified as one of hypoxia-responsive genes coupled to hypoxia-driven angiogenesis. Current research indicates that STC-1 might be a useful molecular marker to detect tumor cells in blood and bone marrow from patients with various types of malignancies.

### Research topic

Bone and cartilage metabolism, Reproduction

### Amino Acid Sequence

THEAEQNDSV SPRKSRVAAQ NSAEVVRCLN SALQVCGAF ACLENSTCDT DGMVDICKSF LYSAAKFDTQ GKAFVKESLK  
CIANGVTSKV FLAIRRCSTF QRMIAEVQEE CYSKLNVCSE AKRNPEAITE VVQLPNHFSN RYYNRLVRSL LECDEDTVST  
IRDSLMEKIG PNMASLFHIL QTDHCAQTHP RADFNRRRTN EPQKLKVLRL NLRGEEDSPS HIKRTSHESA **ASDYKDDDDK**

His 2 to Glu 5 were confirmed by N-terminal sequencing.

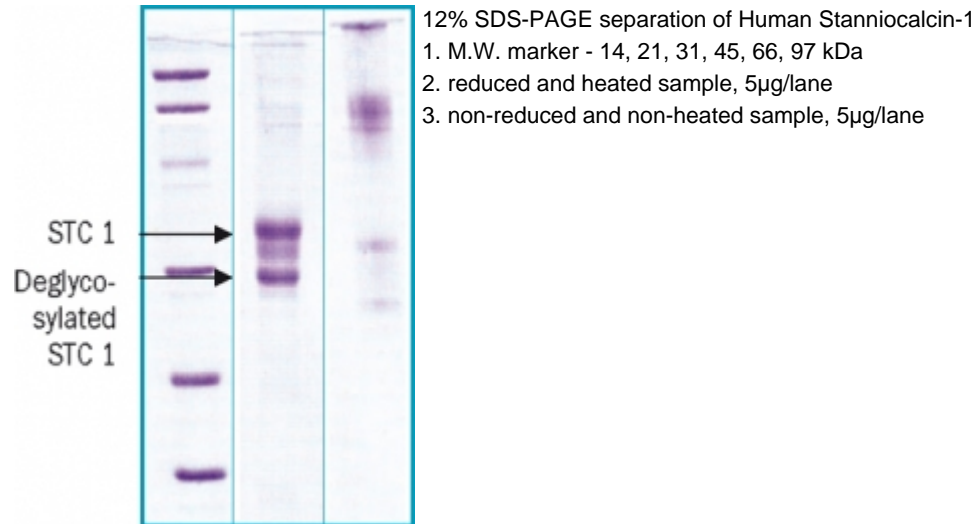
### Source

HEK293

### Purity

>95%

## SDS-PAGE gel



## Endotoxin

< 1.0 EU/ug

## Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 20mM Tris buffer, 20 mM NaCl, pH 7.5

## Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

## Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

## Storage, Stability/Shelf Life

Store lyophilized protein at -20°C. Lyophilized protein remains stable until the expiry date when stored at -20°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

## Quality Control Test

BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

LAL to determine quantity of endotoxin.

## Applications

Cell culture and/or animal studies, ELISA, Western blotting

## Note

This product is intended for research use only. The Certificate of Analysis is available on [www.biovender.com](http://www.biovender.com)

## References to this Product

- Block GJ, Ohkouchi S, Fung F, Frenkel J, Gregory C, Pochampally R, DiMattia G, Sullivan DE, Prockop DJ. *Multipotent stromal cells are activated to reduce apoptosis in part by upregulation and secretion of stanniocalcin-1.* Stem Cells. 2009 Mar;27 (3):670-81
- Westberg JA, Jiang J, Andersson LC. *Stanniocalcin 1 binds hemin through a partially conserved heme regulatory motif.* Biochem Biophys Res Commun. 2011 Jun 3;409 (2):266-9

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