

Recombinant Human Syndecan-1/CD138 Protein

#R00601

Size: 5 µg/100 µg/500 µg

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.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

Syndecan-1, designated CD138, is a dimeric type I transmembrane (TM) protein that belongs to the syndecan family of Type 1 transmembrane proteins. The four syndecan family members are major carriers of heparan sulfate (HS) and chondroitin sulfate glycosaminoglycans (GAGs) that have different expression patterns and extracellular sequences. Syndecan-1 forms weak non-covalent homodimers, or heterodimers with Syndecan-2 or -3, through interactions of the transmembrane domain. It is synthesized as a 310 amino acid (aa) precursor with a 17 aa signal sequence, a 234 aa extracellular domain (ECD) that includes three closely-spaced consensus Ser-Gly HS attachment sites near the N-terminus, a 25 aa TM segment, and a 34 aa cytoplasmic region that includes a PDZ binding motif with a tyrosine phosphorylation site. The ECD is variably modified by GAGs, producing molecular weights of 120 - 200 kDa

for native Syndecan-1. Soluble forms are shed via proteolytic cleavage. Human Syndecan-1 ECD shares 65 - 71% aa identity with the ECD of rat, mouse, canine, equine and bovine Syndecan-1. Syndecan-1 shows highest expression on epithelial cells such as keratinocytes, and terminally differentiated B cells such as plasma cells. It aids wound healing in skin, cornea, and heart following myocardial infarction by promoting re-epithelialization, migration, and collagen deposition. It binds chemokines, creating chemotactic gradients when shed, but also binds and modulates integrins to control the influx of leukocytes. The net effect is to allow, but limit, inflammation. In myeloma and other cancers, shedding of Syndecan-1 can facilitate growth, angiogenesis and metastasis. Growth factors, such as FGFs and HGF, bind GAG chains and use Syndecan-1 as a coreceptor. The GAG chains may also be used by a variety of viruses and bacteria for cell adhesion and uptake.

AA Sequence

QIVATNLPPEDQDGSGDDSDNFSGSGAGALQDITLS
QQTPSTWKDTQLLTAIPTSPPTGLEATAASTSTLPAG
EGPKEGEAVVLPEVEPGLTAREQEATPRPRETTQLPT
THLASTTTATTAAQEPATSHPHRDMQPGHHETSTPAG
PSQADLHTPHTEDGGPSATERAAEDGASSQLPAAEG
SGEQDFTFETSGENTAVVAVEPDRRNQSPVDQGATG
ASQGLLDRKEVLG

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further dilutions should be made in appropriate buffered solutions.

Product Specification

Species	Human
Source	Escherichia coli.
Molecular Weight	The protein has a calculated MW of 23.9 kDa, containing 232 amino acids. The protein migrates as 40-50 kDa in SDS-PAGE under reducing condition.
Purity	> 95 % by SDS-PAGE analyses.
Biological Activity	Testing in progress.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.0.
Endotoxin	Less than 0.1 EU/µg of rHuSyndecan-1/CD138 as

Shipping	determined by LAL method. The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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