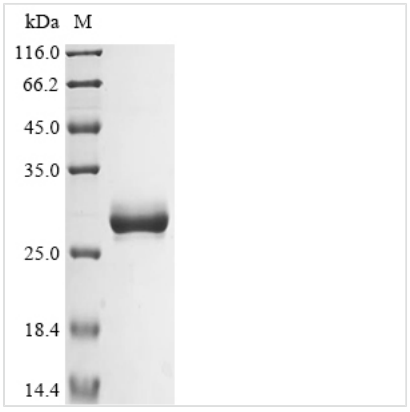
Recombinant Human Basement membrane-specific heparan sulfate proteoglycan core protein (HSPG2), partial

Product Code	CSB-MP010868HU
Abbreviation	Recombinant Human HSPG2 protein, partial
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P98160
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	DAPGQYGAYFHDDGFLAFPGHVFSRSLPEVPETIELEVRTSTASGLLLWQGVE VGEAGQGKDFISLGLQDGHLVFRYQLGSGEARLVSEDPINDGEWHRVTALRE GRRGSIQVDGEELVSGRSPGPNVAVNAKGSVYIGGAPDVATLTGGRFSSGIT GCVKNLVLHSARPGAPPPQPLDLQHRAQAGANTRPCPS
Research Area	Cancer
Source	Mammalian cell
Target Names	HSPG2
Protein Names	Recommended name: Basement membrane-specific heparan sulfate proteoglycan core protein Short name= HSPGAlternative name(s): Perlecan Short name= PLCCleaved into the following 2 chains: 1. Endorepellin 2. LG3 peptide
Expression Region	4197-4391aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	25.6
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Human Basement membrane-specific heparan sulfate proteoglycan core protein (HSPG2) is produced using a mammalian cell expression system, which appears to ensure proper folding and post-translational modifications. This product contains a partial sequence spanning amino acids 4197 to 4391. For practical purposes, it's tagged with an N-terminal 10xHis-tag and a C-terminal Myc-tag to make purification and detection more straightforward. SDS-PAGE analysis indicates the protein shows purity levels greater than 85%, which should make it suitable for various research applications.

HSPG2 represents an essential component of the extracellular matrix and is primarily found in basement membranes. It likely plays a critical role in maintaining structural integrity while supporting cell signaling processes. This proteoglycan seems to participate in various biological pathways—cell adhesion, proliferation, and differentiation among them. These characteristics have made it a significant focus in developmental biology, cell biology, and tissue engineering studies.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Antibody Development and Validation Studies

This recombinant HSPG2 fragment (4197-4391aa) may serve as an immunogen or antigen when developing monoclonal or polyclonal antibodies that target this specific C-terminal region of perlecan. The dual His and Myc tags allow for purification and detection during immunization protocols and subsequent antibody screening assays. While the 85% purity level appears sufficient for antibody generation, researchers might want to consider additional purification steps. This could help minimize cross-reactive antibodies against contaminants. The mammalian expression system likely ensures proper protein folding and post-translational modifications—features that may prove critical for generating antibodies with native epitope recognition.

2. Protein-Protein Interaction Studies Using Tag-Assisted Pull-Down Assays

Both the N-terminal His tag and C-terminal Myc tag make this protein fragment well-suited for investigating protein-protein interactions through pull-down experiments. These can involve cell lysates or purified proteins. Researchers can immobilize the protein using anti-His or anti-Myc antibodies coupled to beads, or through nickel-affinity chromatography to identify potential binding partners of this HSPG2 domain. The tags also make detection and quantification of the protein more manageable in complex mixtures when using tag-specific antibodies. This approach could potentially help clarify the molecular interactions involving the C-terminal region of perlecan in basement membrane assembly or cell signaling pathways.

3. ELISA-Based Binding and Competition Assays

The dual tagging system makes it possible to develop sandwich or competitive ELISA formats for studying molecular interactions involving this HSPG2 fragment. The protein can be captured using anti-His antibodies and detected with anti-Myc antibodies, creating what appears to be a robust detection system for binding studies. These studies might involve other proteins, glycosaminoglycans, or small molecules. The 85% purity seems adequate for ELISA applications, and the mammalian expression system likely helps preserve native protein conformation. Such assays could be used to characterize binding kinetics, specificity, and competitive inhibition patterns relevant to basement membrane biology research.

4. Biochemical Characterization and Stability Studies

This recombinant fragment can be used for detailed biochemical analysis of the C-terminal domain of HSPG2. This might include thermal stability, pH sensitivity, and proteolytic susceptibility studies. The His and Myc tags make protein quantification and tracking during various treatment conditions more straightforward when using tag-specific detection methods. Researchers can investigate how different buffer conditions, ionic strengths, or chemical treatments affect protein stability and conformation. The partial length nature of this construct makes it particularly well-suited for domain-specific functional studies that focus on the 4197-4391aa region without interference from other perlecan domains.

Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.