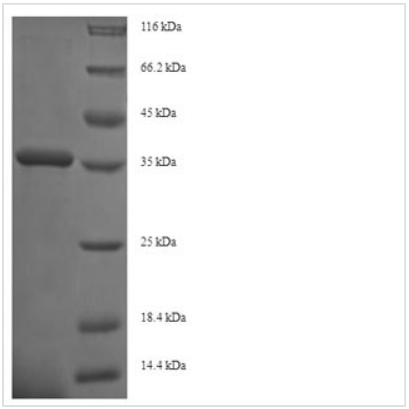
Recombinant Human Integrin alpha-2 (ITGA2), partial

Product Code	CSB-EP011864HU
Relevance	Integrin alpha-2/beta-1 is a receptor for laminin, collagen, collagen C-propeptides, fibronectin and E-cadherin. It recognizes the proline-hydroxylated sequence G-F-P-G-E-R in collagen. It is responsible for adhesion of platelets and other cells to collagens, modulation of collagen and collagenase gene expression, force generation and organization of newly synthesized Extracellular domain matrix.
Abbreviation	Recombinant Human ITGA2 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.	P17301
Alias	CD49 antigen-like family member B Collagen receptor Platelet membrane glycoprotein Ia Short name: GPIa VLA-2 subunit alpha CD_antigen: CD49b
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	WDAVKNFLEKFVQGLDIGPTKTQVGLIQYANNPRVVFNLNTYKTKEEMIVATS QTSQYGGDLTNTFGAIQYARKYAYSAASGGRRSATKVMVVVTDGESHDGSM LKAVIDQCNHDNILRFGIAVLGYLNRNALDTKNLIKEIKAIASIPTERYFFNVSDEA ALLEKAGTLGEQIFSIE
Research Area	Signal Transduction
Source	E.coli
Target Names	ITGA2
Expression Region	188-365aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	35.6kDa
Protein Length	Partial
Image	



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

Description

Recombinant Human Integrin alpha-2 (ITGA2) is produced in E.coli, featuring a partial protein length from amino acids 188 to 365. This product carries an N-terminal 6xHis-SUMO tag for straightforward purification and detection. It achieves a purity level exceeding 90%, as confirmed through SDS-PAGE analysis. Designed strictly for research use, this recombinant protein maintains low endotoxin levels, which appears to make it appropriate for various laboratory applications.

Integrin alpha-2 represents a crucial component of the integrin receptor family. It's primarily involved in cell adhesion and signal transduction processes. The protein plays what seems to be a significant role in mediating interactions between cells and the extracellular matrix. Central to numerous cellular processes, Integrin alpha-2 is frequently studied for its involvement in pathways related to cell migration, proliferation, and tissue remodeling. This makes it particularly valuable for biomedical research insights.

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 ITGA2 fragment (188-365aa) can serve as an immunogen or screening antigen for developing monoclonal or polyclonal antibodies targeting specific epitopes within this region of human integrin alpha-2. The N-terminal 6xHis-SUMO tag simplifies purification and immobilization for ELISA-based antibody screening assays. Researchers may use this protein to validate antibody specificity and cross-reactivity in Western blot, immunoprecipitation, or surface plasmon resonance experiments. The defined amino acid region allows for precise mapping of antibody binding sites within the integrin alpha-2 extracellular domain.

2. Protein-Protein Interaction Studies

The recombinant ITGA2 fragment can be used in pull-down assays to identify and characterize binding partners that interact with the 188-365aa region of integrin alpha-2. The 6xHis tag enables immobilization on nickel-affinity matrices for capturing interacting proteins from cell lysates or purified protein libraries. This approach appears to allow researchers to study specific domain interactions and map binding interfaces within this portion of the integrin alpha-2 subunit. The SUMO tag may also help proper protein folding and stability during interaction studies.

3. Structural and Biophysical Characterization

This partial ITGA2 protein can be applied to structural studies including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to understand the three-dimensional architecture of the 188-365aa region. The high purity (>90%) and defined boundaries make it suitable for biophysical analyses such as dynamic light scattering, analytical ultracentrifugation, or thermal stability assays. Researchers can investigate conformational changes, domain organization, and folding properties of this specific integrin alpha-2 fragment. The His-SUMO tag can be removed by SUMO protease if needed for structural studies.

4. Biochemical Assay Development and Optimization

The recombinant protein serves as a valuable standard and positive control for developing biochemical assays targeting the 188-365aa region of human integrin alpha-2. Researchers can use this protein to establish detection limits, optimize assay conditions, and validate experimental protocols in ELISA, AlphaLISA, or other plate-based assays. The consistent quality and defined composition likely enables reproducible assay development across different laboratories. The protein can also be used to generate standard curves for quantitative measurements in research applications.

Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
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.