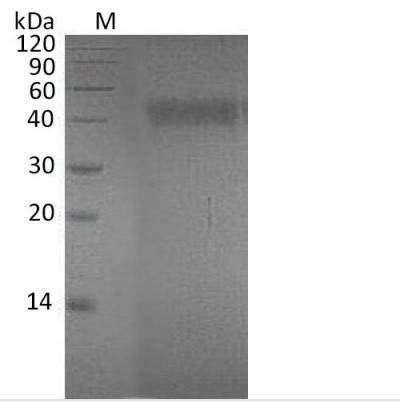
Recombinant Human Ephrin-A4 (EFNA4), partial (Active)

Product Code	CSB-AP005461HU
Abbreviation	Recombinant Human EFNA4 protein, partial (Active)
Uniprot No.	P52798
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4.
Product Type	Others
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human EphA7-His at 2μg/ml can bind Human EFNA4-Fc-His, the ED50 of Recombinant Human EFNA4-Fc-His is 1.5190 ug/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	LRHVVYWNSSNPRLLRGDAVVELGLNDYLDIVCPHYEGPGPPEGPETFALYM VDWPGYESCQAEGPRAYKRWVCSLPFGHVQFSEKIQRFTPFSLGFEFLPGET YYYISVPTPESSGQCLRLQVSVCCKERKSESAHPVGSPGESG
Research Area	Cardiovascular
Source	Mammalian cell
Target Names	EFNA4
Expression Region	26-171aa
Tag Info	C-terminal 6xHis-hFc-tagged
Mol. Weight	44.3 kDa
Protein Length	Partial

Image



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

Description

Recombinant Human Ephrin-A4 (EFNA4) is produced using a mammalian cell expression system and covers amino acid region 26-171. The partial protein carries a C-terminal 6xHis-Fc tag, which makes purification and detection more

straightforward. SDS-PAGE analysis confirms purity levels exceeding 95%. The protein shows biological activity - functional ELISA testing reveals a binding ED50 of 1.5190 ug/ml to Human EphA7-His. Endotoxin levels stay below 1.0 EU/μg.

Ephrin-A4 appears to play an important role in cell signaling, especially during development. As part of the ephrin family, it works with Eph receptors to enable cell-to-cell communication. This interaction seems critical for several pathways that affect how cells stick together, move around, and organize into tissues. These functions make Ephrin-A4 an interesting target for scientists studying how cells develop and communicate.

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. Eph-Ephrin Signaling Pathway Studies

This recombinant EFNA4 protein may prove useful for investigating how Eph-ephrin signaling works at the molecular level in cell culture systems. The binding activity to EphA7 with a defined ED50 value makes it well-suited for dose-response experiments that examine receptor activation and the signaling events that follow. Scientists can study bidirectional signaling - both forward signaling through Eph receptors and reverse signaling through ephrin ligands. High purity and low endotoxin levels should give reliable results in sensitive cell-based experiments.

2. Receptor-Ligand Interaction Analysis

The C-terminal His-Fc tag allows for purification and detection in biochemical assays designed to characterize how Eph and ephrin proteins bind to each other. Surface plasmon resonance (SPR) or bio-layer interferometry (BLI) experiments can use this protein to measure binding kinetics, affinity constants, and how specifically it interacts with different Eph receptor family members. The Fc tag also makes it easy to attach the protein to protein A/G surfaces for binding studies. These interaction studies might provide useful quantitative data about receptor selectivity and how different proteins compete for binding sites within the Eph-ephrin system.

3. Cell Adhesion and Migration Assays

Scientists can attach EFNA4 to culture surfaces to study how it affects cell adhesion, spreading, and migration in laboratory conditions. The protein's biological activity and ability to engage Eph receptors suggests it could be valuable for investigating how cell-to-cell contact influences cellular behavior. Researchers might coat plates or beads with this protein to examine how EFNA4-Eph interactions change cell attachment, detachment, or directional

movement. The mammalian expression system likely ensures proper protein folding and modifications that could be important for these cellular responses.

4. Antibody Development and Validation

The recombinant EFNA4 protein works well as an antigen for creating and testing antibodies that specifically recognize human ephrin-A4. High purity and the defined expression region (26-171aa) offer a consistent target for immunization protocols and antibody screening. The His-Fc tag makes purification and immobilization easier for ELISA-based antibody testing, while the demonstrated biological activity suggests the protein maintains proper shape. This protein can help validate antibody specificity, identify binding sites, and create standard curves for quantitative immunoassays.

5. Functional ELISA Development

Building on the activity testing approach described, this protein may be useful for developing and optimizing functional ELISA assays to study Eph-ephrin interactions. The established binding protocol with EphA7 and known ED50 value provide a starting point for creating standardized binding assays. Researchers could potentially use this protein to develop competitive binding assays, screen for small molecule inhibitors, or measure Eph receptor expression levels in cell lysates or tissue samples. The Fc tag helps with detection and the low endotoxin content should support assay reliability.

Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
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.