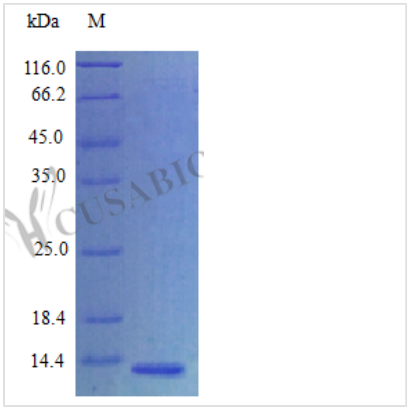
Recombinant Human Amphiregulin protein (AREG), partial (Active)

Product Code	CSB-AP002641HU
Abbreviation	Recombinant Human AREG protein, partial (Active)
Uniprot No.	P15514
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Growth Factor
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using murine Balb/c 3T3 cells is between 5-10 ng/ml.
Purity	>95% as determined by SDS-PAGE.
Sequence	SVRVEQVVKP PQNKTESENT SDKPKRKKKG GKNGKNRRNR KKKNPCNAEF QNFCIHGECK YIEHLEAVTC KCQQEYFGER CGEKSMKTHS MIDSSLSK
Research Area	Cancer
Source	E.coli
Target Names	AREG
Expression Region	101-198aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	11.3 kDa
Protein Length	Partial
PubMed ID	2325643; 15489334; 2466334; 3413110; 2017164; 1333777; 22967896; 7679104; 17607000;
Image	



Description

Recombinant Human Amphiregulin protein (AREG) is produced in an E. coli expression system and covers the amino acid region 101-198, presented as a partial protein. This product is tag-free and exhibits a purity level exceeding 95% as determined by SDS-PAGE. The endotoxin level is maintained at less than 1.0 EU/μg, ensuring low contamination for research purposes. Biologically active, this protein achieves an ED50 of 5-10 ng/ml in a cell proliferation assay using murine Balb/c 3T3 cells.

Amphiregulin functions as a growth factor that appears to play important roles in various cellular processes, including cell proliferation and differentiation. As a member of the epidermal growth factor (EGF) family, it interacts with the epidermal growth factor receptor (EGFR) and likely contributes to tissue development and repair. What makes amphiregulin particularly interesting for researchers is its involvement in signaling pathways that may regulate cellular growth and development.

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. Cell Proliferation and Growth Factor Studies

This recombinant human amphiregulin protein can help researchers investigate cell proliferation mechanisms and growth factor signaling pathways across different cell lines. With confirmed biological activity showing an ED50 of 5-10 ng/ml in murine Balb/c 3T3 cells, it provides a solid reference point for dose-response studies. Scientists can examine how amphiregulin affects various cell types and compare proliferative responses under different experimental conditions. The high purity (>95%) and low endotoxin levels make it well-suited for sensitive cell culture work where contamination might interfere with results.

2. EGF Receptor Family Signaling Research

Since amphiregulin acts as a ligand for EGF receptors, this protein can be used

to study EGFR and ErbB receptor activation along with their downstream signaling cascades. Researchers may investigate receptor binding kinetics, phosphorylation patterns, and the intracellular signaling events that follow. The protein's tag-free nature is particularly valuable here—it means receptor binding studies won't be complicated by potential steric hindrance from purification tags. This approach appears especially useful for understanding how amphiregulin's specificity and potency compares to other EGF family ligands.

3. Antibody Development and Validation

This highly pure recombinant amphiregulin protein works well as an antigen for developing and characterizing anti-amphiregulin antibodies. It can be used in immunization protocols for both monoclonal and polyclonal antibody production, and for screening and validating antibody specificity and affinity. Researchers can apply this protein in various immunoassay formats—ELISA, Western blotting, and surface plasmon resonance—to characterize how well their antibodies perform. The confirmed biological activity also makes it possible to test whether neutralizing antibodies actually work functionally.

4. Protein-Protein Interaction Studies

The recombinant amphiregulin protein can be applied in biochemical assays to explore its interactions with receptors, binding proteins, and other molecular partners. Binding assays, co-immunoprecipitation experiments, and biosensor-based interaction studies may help characterize the molecular mechanisms behind amphiregulin function. Its high purity and tag-free format make it ideal for techniques that require native protein conformation and minimal interference from purification artifacts. These studies might provide insights into amphiregulin's role in cellular processes and signaling networks.

5. Comparative Functional Analysis

This biologically active recombinant protein allows for comparative studies examining amphiregulin's effects relative to other growth factors and cytokines. Researchers can design experiments comparing the potency, kinetics, and cellular responses that amphiregulin induces versus other EGF family members or growth factors. The established ED50 range offers a quantitative benchmark for such comparisons. This type of analysis seems valuable for understanding what makes amphiregulin unique in cellular processes and for identifying potential functional overlaps or synergies with other signaling molecules.

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