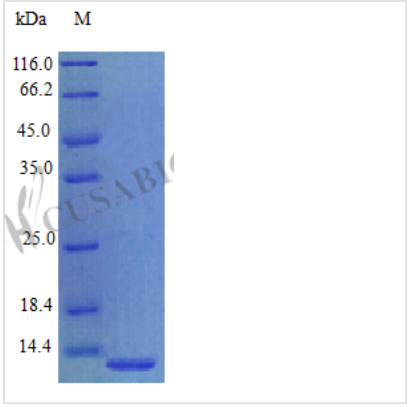
Recombinant Human Prokineticin-1 protein (PROK1) (Active)

Product Code	CSB-AP002671HU
Abbreviation	Recombinant Human PROK1 protein (Active)
Uniprot No.	P58294
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4, 0.02 % Tween-20
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 bovine EJG cells is less than 2.0 μg/ml, corresponding to a specific activity of >500 IU/mg.
Purity	>98% as determined by SDS-PAGE.
Sequence	AVITGACERD VQCGAGTCCA ISLWLRGLRM CTPLGREGEE CHPGSHKVPF FRKRKHHTCP CLPNLLCSRF PDGRYRCSMD LKNINF
Research Area	Signal Transduction
Source	E.coli
Target Names	PROK1
Expression Region	20-105aa
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	9.7 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	11259612; 11528470; 12975309; 16710414; 15489334; 15340161; 15292351; 17289879; 18339712
Image	

Description

Recombinant Human Prokineticin-1 protein (PROK1) is expressed in E. coli, covering the full length of the mature protein from amino acids 20 to 105. This tag-free protein achieves a purity greater than 98% as determined by SDS-PAGE and shows robust biological activity, with an ED50 of less than 2.0 μg/ml in a bovine EJG cell proliferation assay. It maintains an endotoxin level of less than 1.0 EU/μg, which appears to ensure high-quality research results.

Prokineticin-1 is a secreted protein known for its involvement in angiogenesis and modulation of gastrointestinal motility. The protein plays what seems to be a crucial role in various physiological processes, including the regulation of smooth muscle contraction and neurogenesis. Given its diverse functions, PROK1 has become a significant focus in research areas related to vascular biology and reproductive health.

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 Viability Assays

This recombinant PROK1 protein can be used to investigate the proliferative effects of prokineticin-1 on various cell types in vitro, building upon the established activity testing using bovine EJG cells. Researchers may determine dose-response relationships and compare sensitivity across different cell lines to understand PROK1's role in cellular growth regulation. The defined ED50 value and specific activity provide quantitative benchmarks for experimental design and result interpretation. High purity and low endotoxin levels likely ensure reliable and reproducible results in cell-based assays.

2. Receptor Binding and Signaling Studies

The biologically active PROK1 protein can serve as a ligand in receptor binding assays to study interactions with prokineticin receptors PKR1 and PKR2. Scientists can perform competitive binding experiments, receptor saturation studies, and downstream signaling pathway analysis using this protein as a positive control or experimental stimulus. The tag-free nature of the protein appears to eliminate potential interference from fusion tags in receptor binding studies. Such applications may help elucidate the molecular mechanisms underlying PROK1-mediated cellular responses.

3. Antibody Development and Validation

This high-purity recombinant PROK1 protein can be used as an immunogen for generating specific antibodies against human prokineticin-1 or as a standard for antibody characterization. The protein serves well in ELISA-based assays to

determine antibody specificity, affinity, and cross-reactivity. Scientists can use it to validate newly developed antibodies through Western blotting, immunoprecipitation, or other immunoassays. The mature protein sequence (aa 20-105) represents the biologically relevant form, making it suitable for developing antibodies that recognize the native protein.

4. Protein-Protein Interaction Studies

The recombinant PROK1 protein can be applied in biochemical assays to identify and characterize protein-protein interactions involving prokineticin-1. Researchers can use it in pull-down assays, surface plasmon resonance, or other biophysical techniques to study binding partners and interaction kinetics. The biological activity of the protein suggests that it maintains proper folding and functional conformation necessary for physiologically relevant interactions. These studies may provide insights into PROK1's role in various cellular processes and signaling networks.

5. Pharmacological Research and Drug Screening

This biologically active PROK1 protein can be applied in screening assays to identify small molecule modulators or inhibitors of prokineticin-1 function. The established cell proliferation assay system with defined activity parameters provides a foundation for developing high-throughput screening platforms. Scientists can evaluate the effects of potential therapeutic compounds on PROK1-induced cellular responses in preclinical studies. The consistent specific activity and low endotoxin content make it suitable for compound screening applications where reproducibility and minimal interference are critical.

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.