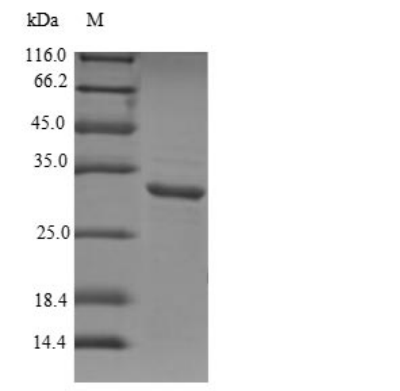
Recombinant Human Aquaporin-1 (AQP1), partial

Product Code	CSB-EP001957HUe0
Relevance	Forms a water-specific channel that provides the plasma mbranes of red cells and kidney proximal tubules with high permeability to water, thereby permitting water to move in the direction of an osmotic gradient.
Abbreviation	Recombinant Human AQP1 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.	P29972
Alias	Aquaporin-CHIPUrine water channelWater channel protein for red blood cells and kidney proximal tubule
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GALAVLIYDFILAPRSSDLTDRVKVWTSGQVEEYDLDADDINSRVEMKPK
Source	E.coli
Target Names	AQP1
Expression Region	220-269aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal GST-tagged
Mol. Weight	32.6kDa
Protein Length	Partial

Image



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

Description

Recombinant Human Aquaporin-1 (AQP1) is produced in E.coli, covering amino

acid region 220-269 with an N-terminal GST tag that helps with solubility and purification. The protein comes with purity levels exceeding 90%, confirmed through SDS-PAGE analysis, which should provide reliable results for experimental work. This product is meant for research use only and isn't intended for therapeutic or diagnostic purposes.

Aquaporin-1 (AQP1) is a water channel protein that moves water across cell membranes, playing an important role in various physiological processes. The protein is involved in regulating water homeostasis and appears to be a key component in several tissues, including the kidney, lung, and vascular system. AQP1's function in water transport makes it a valuable target for research on fluid balance and cellular hydration.

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. GST Pull-Down Assays for Protein-Protein Interaction Studies

The N-terminal GST tag allows this recombinant AQP1 fragment (220-269aa) to bind to glutathione-sepharose beads for pull-down experiments. This C-terminal region of AQP1 might contain binding sites for intracellular regulatory proteins or trafficking machinery components. Researchers can use the assay to identify novel binding partners from cell lysates or confirm known interactions with purified candidate proteins. The >90% purity should minimize background binding from contaminating proteins.

2. Antibody Development and Validation

This purified AQP1 fragment works as an immunogen for creating polyclonal or monoclonal antibodies specific to the C-terminal region of human AQP1. The recombinant protein can also validate antibody specificity through ELISA, Western blot, or surface plasmon resonance assays. The GST tag makes immobilization straightforward during antibody screening and characterization. High purity levels reduce the chance of generating antibodies against bacterial contaminants.

3. Biochemical Characterization of Protein Stability

Researchers can subject the recombinant AQP1 fragment to various biochemical analyses to examine its folding properties, thermal stability, and response to different buffer conditions. Techniques like circular dichroism spectroscopy, differential scanning fluorimetry, or dynamic light scattering may provide insights into the structural characteristics of this specific domain. These studies could contribute to understanding how the C-terminal region of AQP1 behaves when isolated from the full-length protein.

4. Competitive Binding Assays

The GST-tagged AQP1 fragment can be used in competitive binding experiments to examine interaction kinetics between the C-terminal domain and potential binding partners. Scientists can immobilize the recombinant protein and introduce varying concentrations of competitor molecules to determine binding affinities and specificity. This approach appears particularly useful for screening small molecules or peptides that might modulate AQP1 interactions, or for studying how post-translational modifications affect binding capacity.

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.