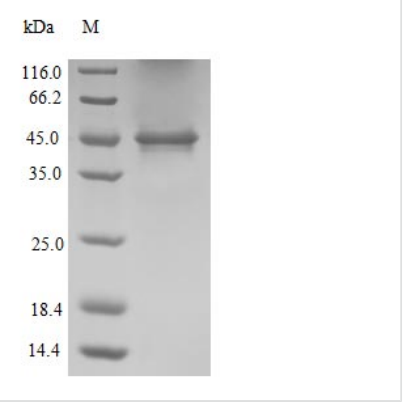
Recombinant Human Aquaporin-1 (AQP1)

Product Code	CSB-CF001957HU(A4)
Relevance	Forms a water-specific channel that provides the plasma membranes 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
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
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Others
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	ASEFKKKLFWRAVVAEFLATTLFVFISIGSALGFKYPVGNNQTAVQDNVKVSLA FGLSIATLAQSVGHISGAHLNPAVTLGLLLSCQISIFRALMYIIAQCVGAIVATAIL SGITSSLTGNSLGRNDLADGVNSGQGLGIEIIGTLQLVLCVLATTDRRRRDLGG SAPLAIGLSVALGHLLAIDYTGCGINPARSFGSAVITHNFSNHWIFWVGPFIGGA LAVLIYDFILAPRSSDLTDRVKVWTSGQVEEYDLDADDINSRVEMKPK
Research Area	Signal Transduction
Source	in vitro E.coli expression system
Target Names	AQP1
Expression Region	2-269aa
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	41.3 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

To produce the recombinant human Aquaporin-1 (AQP1), the gene coding for the AQP1 protein (2-269aa) is first isolated and inserted into a plasmid vector along with the N-terminal 6xHis-SUMO-tag gene. This vector is cultured in the in vitro E.coli expression system to induce the expression of the AQP1 protein. After sufficient growth, the culture supernatant is collected and purified to obtain the recombinant AQP1 protein. The purified AQP1 protein undergoes an SDS-PAGE test to measure its purity, greater than 90%.

AQP1 is a fundamental member of the aquaporin superfamily, serving as a prototype for understanding the rapid regulation of aquaporin function and cellular water transport mechanisms [1]. AQP1, the first identified aquaporin, is crucial for regulating membrane water permeability and is involved in various physiological processes such as water reabsorption in the kidney, vascular function, cell migration, and angiogenesis [2][3][4]. Studies have demonstrated that AQP1 translocates rapidly in response to stimuli, thereby regulating water flow across membranes [2]. Moreover, AQP1 has been associated with water balance disorders and is considered a potential target for conditions like glaucoma and cancer [3][4]. The tetrameric organization of AQP1 contributes to its functionality in facilitating water transport across membranes [4].

AQP1's expression in tissues like the gastrointestinal system and vascular smooth muscle cells highlights its significance in maintaining water balance and cellular function [5][6]. Structural studies utilizing techniques such as electron crystallography and solid-state NMR have provided insights into the extracellular loops and dynamics of AQP1 [7].

References:

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Shelf Life

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