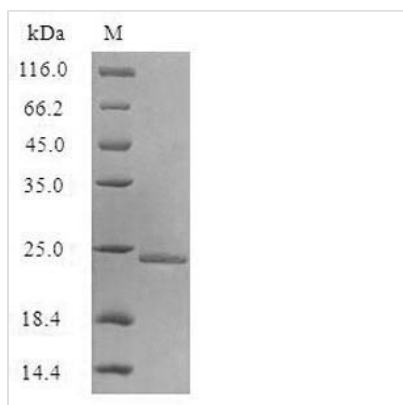


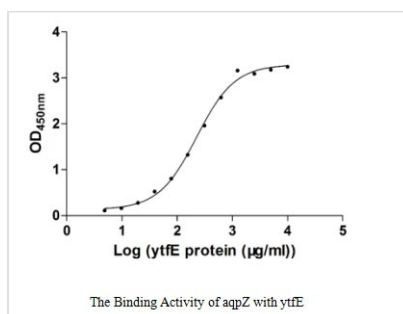


Recombinant Escherichia coli Aquaporin Z (aqpZ) (Active)

Product Code	CSB-CF352724ENV
Relevance	Channel that permits osmotically driven movement of water in both directions. It is involved in the osmoregulation and in the maintenance of cell turgor during volume expansion in rapidly growing cells. It mediates rapid entry or exit of water in response to abrupt changes in osmolarity
Abbreviation	Recombinant E.coli AQPZ protein (Active)
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.	P60844
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Others
Immunogen Species	Escherichia coli (strain K12)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized aqpZ at 5 µg/ml can bind E.coli ytfE, the EC50 of E.coli ytfE protein is 197.90-259.70 µg/ml.
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MFRKLAAECFGTFWLVFGGCGSAVLAAGFPELGIGFAGVALAFGLTVLTMAFA VGHISGGHFNPAVTIGLWAGGRFPAKEVVGYVIAQVVGIVAAALLYLIASGKT GFDAAASGFASNGYGEHSPGGYSMLSALVVELVLSAGFLLVIHGATDKFAPAG FAPAIAGLALTLIHLISIPVTNTSVNPARSTAVAIFQGGWALEQLWFFWVVPVGG IIGGLIYRTLLEKRD
Research Area	Microbiology
Source	in vitro E.coli expression system
Target Names	aqpZ
Expression Region	1-231aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	27.7kDa
Protein Length	Full Length
Image	



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



Activity
Measured by its binding ability in a functional ELISA. Immobilized aqpZ at 5 μg/ml can bind E.coli ytfE, the EC_{50} of E.coli ytfE protein is 197.90-259.70 μg/ml.

Description

Aquaporin Z (AqpZ) is an integral membrane protein found in *Escherichia coli* and *Synechocystis* sp. PCC 6803, which functions as a water-permeable channel in the plasma membrane [1]. It is a tetrameric protein that forms water channels in the cell membrane of *Escherichia coli* [2]. AqpZ plays a crucial role in the transport of water across *Escherichia coli* cells with a high rate [3]. Additionally, it is involved in cell volume regulation and sensitivity to osmotic stress in *Synechocystis* sp. PCC 6803 [4]. The physiological role of AqpZ includes its involvement in the short- and long-term osmoregulatory response and its requirement by rapidly growing cells [5]. Furthermore, AqpZ is highly stable and has negligible permeability to glycerol [6]. It has been shown to selectively conduct only water at high rates [7].

The molecular water transporter AqpZ remained elusive until its discovery, and the regulation of the aqpZ gene expression and the physiological function of the AqpZ protein are still not fully understood [8]. However, studies have shown that AqpZ is a specific biological water channel with high osmotic water permeability, lack of N-linked glycan, resistance to proteolysis, and is not inhibited by any biological macromolecules [9]. This makes AqpZ-based water recovery technology a promising prospect for water filtration and recovery, especially for space flight applications [9].

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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.