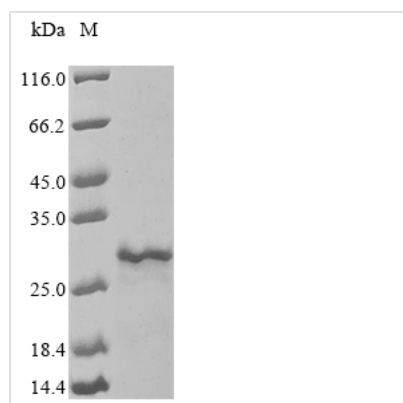




Recombinant Mycobacterium smegmatis Porin MspA (mspA)

Product Code	CSB-EP369785MVX
Abbreviation	Recombinant Mycobacterium smegmatis mspA 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.	A0QR29
Product Type	Recombinant Proteins
Immunogen Species	Mycobacterium smegmatis (strain ATCC 700084 / mc(2)155)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	GLDNELSLVDGQDRTLTVQQWDTFLNGVFPLDRNRLTREWFHSGRAKYIVAG PGADEFEGTLELGYQIGFPWSLGVGINFSYTTNLIIDDGDITAPPFGLNSVITP NLFPGVSISADLGNPGIQEVATFSVDVSGAEGGVAVSNAHGTVTGAAGGVLL RPFARLIASGTGDSVTTTYGEPWNMN
Research Area	Others
Source	E.coli
Target Names	mspA
Protein Names	Recommended name: Porin MspA
Expression Region	28-211aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	25.4 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

The production of the recombinant *Mycobacterium smegmatis* porin MspA begins with the creation of the recombinant plasmid, which is synthesized by co-inserting the gene encoding the *Mycobacterium smegmatis* MspA protein (28-211aa) with the N-terminal 10xHis-tag gene into a plasmid vector. The recombinant plasmid is introduced into *E. coli* cells. *E. coli* cells that can survive in the presence of a specific antibiotic are selected and then cultured under conditions conducive to the expression of the gene of interest. Following expression, the recombinant MspA protein is isolated and purified from the cell lysate using affinity purification. Denaturing SDS-PAGE is then employed to resolve the resulting recombinant *Mycobacterium smegmatis* MspA protein, demonstrating a purity exceeding 85%.

The protein MspA, found in *Mycobacterium smegmatis*, is a key player in moving charged particles across the cell membrane [1]. Unlike other outer membrane proteins, MspA stands out structurally and serves as the primary route for water-soluble molecules to enter *Mycobacterium smegmatis* [2]. Acting as the main doorway, MspA allows small, water-loving molecules to pass through the tough outer membrane [3]. Remarkably, even under harsh conditions like boiling or exposure to strong solvents, MspA maintains its structure, highlighting its stability [4]. Moreover, MspA is crucial for creating paths through the cell wall of *Mycobacterium smegmatis* [5].

MspA, forming eight parts with a single opening, is perfect for nanopore sequencing [6]. It's also the prototype of a new group of pore-forming proteins that have a single, large pore, enabling the movement of water-soluble molecules through the cell wall [7]. The gene responsible for MspA makes a precursor protein, which then gets processed into the mature form [8][9].

References:

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<https://doi.org/10.1046/j.1365-2958.1999.01472.x>

Shelf Life

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