

PRODUCT INFORMATION



BmrA (*B. subtilis* 168)

Item No. 24734

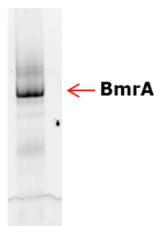
Overview and Properties

Synonym: Multidrug Resistance ABC Transporter ATP-binding/permease Protein BmrA (*Bacillus subtilis* strain 168)
Source: N-terminal histidine-tagged *B. subtilis* strain 168 BmrA purified from *E. coli*
Amino acids: Full-length, wild-type sequence
Uniprot No.: O06967
Molecular Weight: ~64.5 kDa
Storage: -80°C (as supplied)
Stability: ≥2 years
Purity: *batch specific* (≥90% estimated by SDS-PAGE)
Supplied in: 50 mM HEPES pH, 8.0, 150 mM sodium chloride, and 0.01% DDM
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

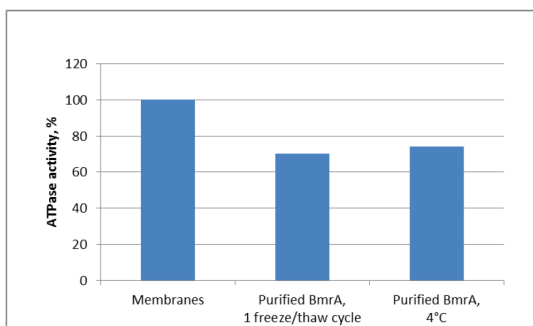
Images



SDS-PAGE.
IMAC elution fraction of BmrA was migrated on a 4-15% Tris-glycine SDS-PAGE and the total proteins were Stain-Free detected. The black arrow indicates full-length BmrA.



Clear Native-PAGE.
Purified BmrA was migrated on a 4-15% Tris-glycine native-PAGE and the total proteins were Stain-Free detected.



ATPase activity of BmrA.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

B. subtilis multidrug resistance ATP-binding cassette (ABC) transporter ATP-binding protein (BmrA), also known as YvcC, is a multidrug ABC transporter that is constitutively expressed in *B. subtilis*.¹ It belongs to the ABC family and shares sequence homology to mammalian P-glycoprotein (P-gp) and LmrA from *L. lactis*. BmrA is also homologous to HorA, a multidrug ABC transporter from *L. brevis*, Q8Y3T6 and Q8NXS2, putative transporters from Gram-positive bacteria, and MsbA, a lipid A transporter from *E. coli*. BmrA transports Hoechst, doxorubicin, and 7-aminoactinomycin D in an ATP-dependent manner. The ATPase mutants BmrA^{K380A} and BmrA^{K380R} are completely devoid of transport activity. Mutations in the intergenic region preceding *bmrA* increase BmrA mRNA expression and *bmrA* promoter activity in *B. subtilis*, which confer resistance to the antibiotic cervimycin C.²

References

1. Steinfels, E., Orelle, C., Fantino, J.-R., *et al.* Characterization of YvcC (BmrA), a multidrug ABC transporter constitutively expressed in *Bacillus subtilis*. *Biochemistry* **43**(23), 7491-7502 (2004).
2. Krügel, U., Licht, A., Biedermann, G., *et al.* Cervimycin C resistance in *Bacillus subtilis* is due to a promoter up-mutation and increased mRNA stability of the constitutive ABC-transporter gene *bmrA*. *FEMS Microbiol. Lett.* **313**(2), 155-163 (2010).

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