PRODUCT INFORMATION

BmrA (*B. subtilis* 168)

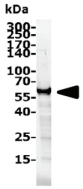
Item No. 24734

Overview and Properties

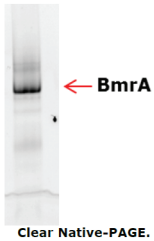
Synonym:	Multidrug Resistance ABC Transporter ATP-binding/permease Protein BmrA (*Bacillus subtilis* strain 168)
Source:	N-terminal histidine-tagged *B. subtilis* strain 168 BmrA purified from *E. coli*
Amino acids:	Full-length, wild-type sequence
Uniprot No.:	O06967
Molecular Weight:	~64.5 kDa
Storage:	-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.

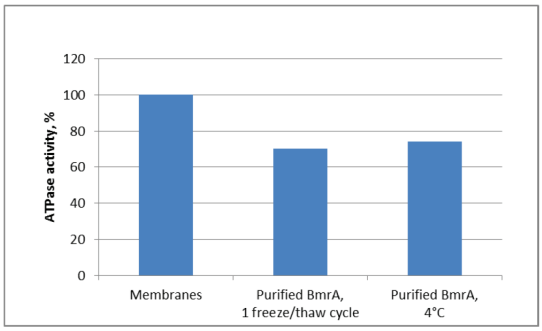
Images



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.

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION

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).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM