

1 **A novel efflux transporter, ArsK, is responsible for bacterial resistance**
2 **to arsenite, antimonite, trivalent roxarsone and methylarsenite**

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15 Running Head: The novel arsenic efflux transporter ArsK

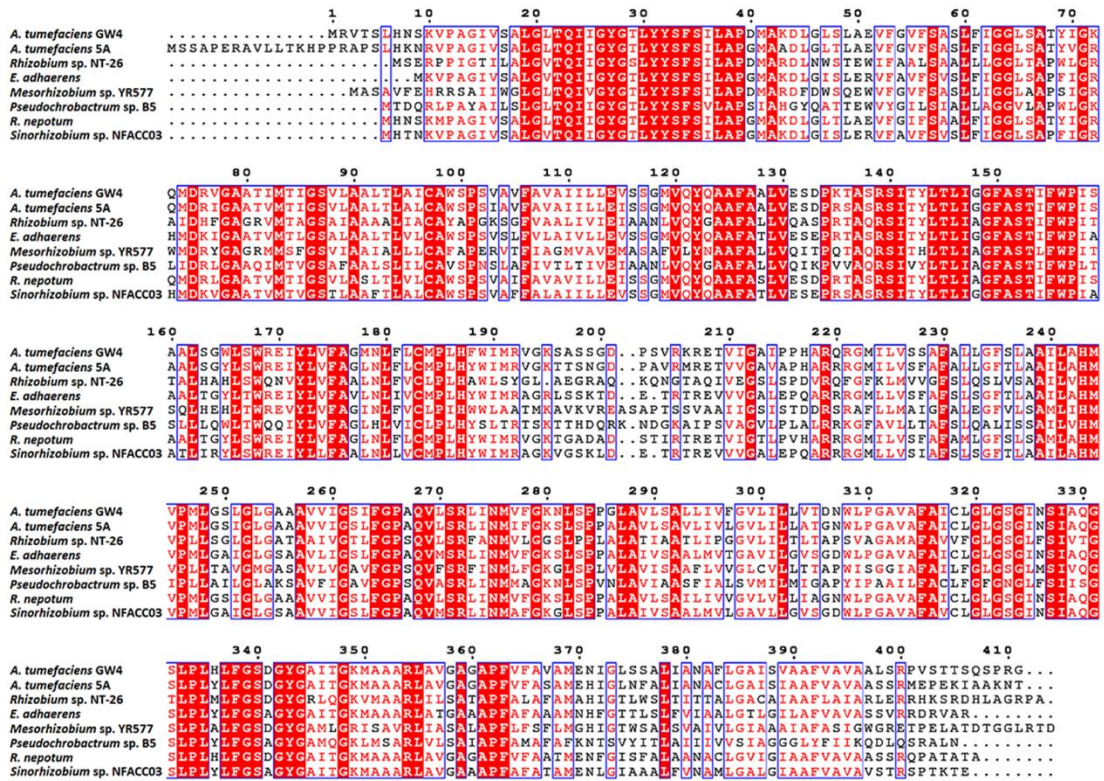
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24 **Figure S1. Multiple alignment of ArsK sequences.** The protein sequence of ArsK
 25 from *Agrobacterium tumefaciens* GW4 (KDR86814) is compared with ArsK sequences
 26 from *Agrobacterium tumefaciens* 5A (WP_080581087), *Rhizobium* sp. NT-26
 27 (WP_052642607), *Ensifer adhaerens* (WP_034801600), *Mesorhizobium* sp. YR577
 28 (WP_091917949), *Pseudochrobactrum* sp. B5 (WP_075657088), *Rhizobium nepotum*
 29 (WP_045020795) and *Sinorhizobium* sp. NFACC03 (WP_093232735). The multiple
 30 alignment was calculated with Clustal Omega and ESPrnt 3.0.

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1      10      20      30      40      50      60
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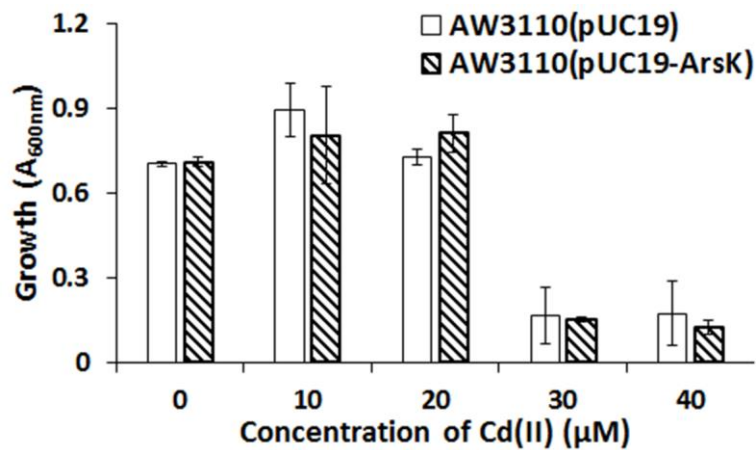
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37 **Figure S2. Multiple alignment of ArsR2 sequences.** The protein sequence of ArsR2
38 from *Agrobacterium tumefaciens* GW4 (WP_020810055, this study) was compared
39 with ArsR sequences from *Agrobacterium* sp. D14 (WP_059754788), Rhizobiales
40 bacterium (WP_111793746), *Rhizobium tibeticum* (WP_072379893), *Agrobacterium*
41 sp. 7 (ASK43079), *Rhizobium* sp. ACO-34A (WP_099057160) and Rhizobiales
42 bacterium (WP_112534859). The multiple alignment was calculated with Clustal
43 Omega and ESPrpt 3.0.

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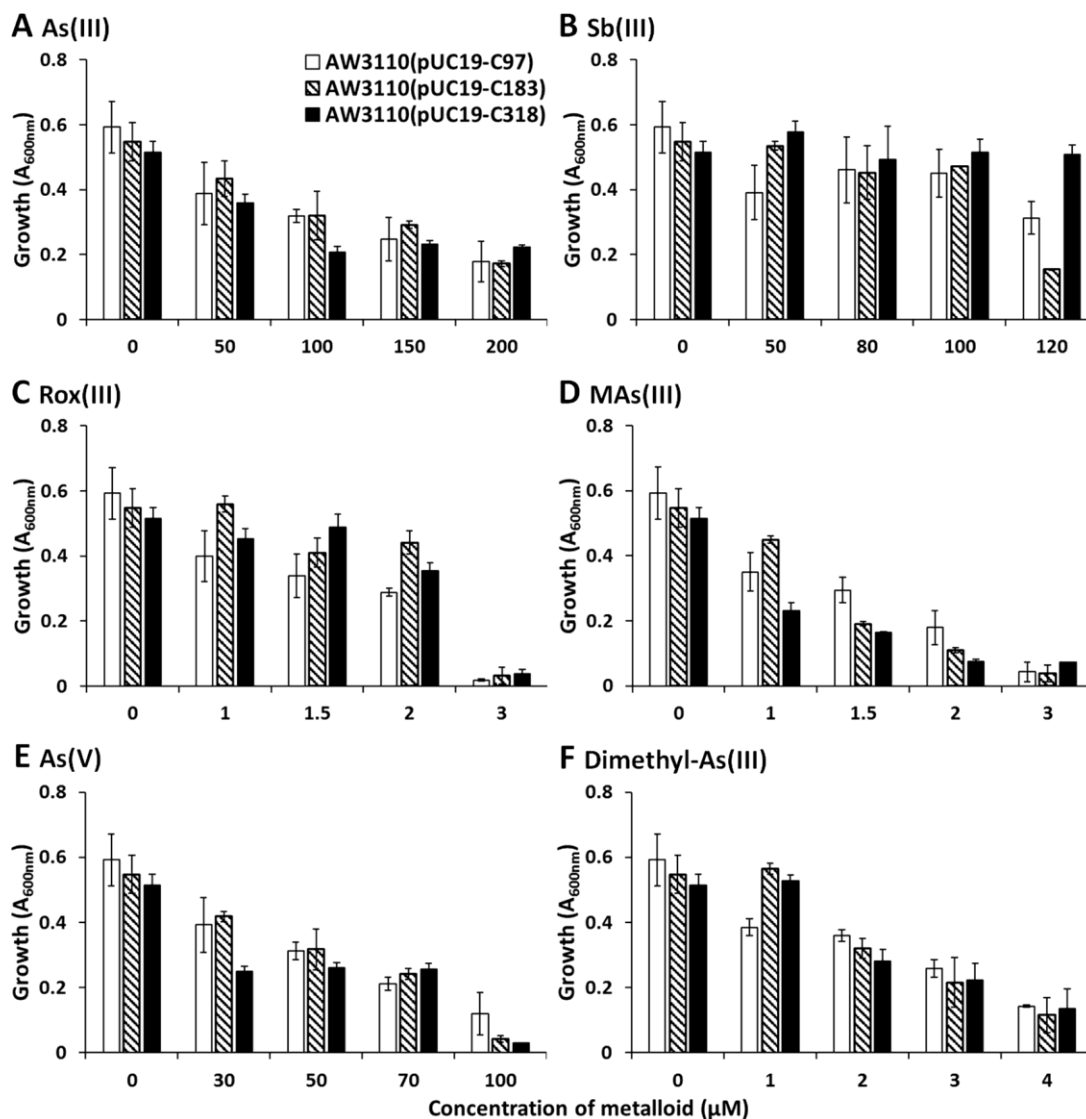


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46 **Figure S3. The resistance of strains AW3110 (pUC19) and AW3110 (pUC19-ArsK)**
47 **to Cd(II).** The data are shown as the means of three replicates.

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51 **Figure S4. The resistance of several ArsK mutant strains to As(III), Sb(III),**
 52 **Rox(III), MAs(III), As(V) and Dimethyl-As(III).** Growth of strains were measured
 53 with the addition of different amounts of As(III) (A), Sb(III) (B), Rox(III) (C), MAs(III)
 54 (D), As(V) (E) and Dimethyl-As(III) (F). The curves of AW3110 (pUC19) and AW3110
 55 (pUC19-ArsK) in Figure 3 could be the negative and positive control. The data are
 56 shown as the means of three replicates.