

***Trans*-acting regulation and Arsenite sensing properties
of *ars* operon**

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The arsenic resistance operon from pMH12 in *Klebsiella oxytoca* contains two regulatory genes. The first open reading frame for *arsR* extend up to 348 bp and has a translational product corresponding to a protein of 116 amino acid residue polypeptide with a molecular mass of 13 kDa. And the second ORF for *arsD* extend up to 360 bp and express a protein of 120 amino acid residue polypeptide with 13kDa. ArsR and ArsD have both metal binding domain and DNA binding helix-turn-helix. For revealing the regulation of ArsR and ArsD. We constructed promoter::*lacZ* vector which was complemented by ArsR or ArsD experiment repression of transcription by β -galactosidase assay. Sodium-m-arsenite shifts 100 fold of β -galactosidase activity. And metalloid sensing system is designed with arsenite inducible promoter. This result demonstrate that ArsR and ArsD have arsenite binding domain and DNA binding domain, so they repress transcription of *ars*-operon.

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