

## Abstract

Increasing heavy metal pollution can be dealt with not only through physical and chemical decontamination processes but also utilizing microbial bioremediation, a much more environmentally friendly way. Members of genus *Rhodococcus* are suitable candidates for effective bioremediations of heavy metals due to their considerable adaptability and extreme resistance to different stress conditions, including those related to presence of heavy metals or their toxic compounds. Individual rhodococcal strains are more resistant to heavy metals than most of other microorganisms and they are capable of biotransforming them to less toxic forms or at least of accumulating effectively or adsorbing them on produced polysaccharides and specific surface active substances. Their bioremediation potential is very high even though, so far, only molecular mechanisms of rhodococcal resistances to toxic arsenic compounds have been studied more in detail.