

140. The putative toxin-antitoxin *mazEF* gene cluster is not involved in cell death in *S. Epidermidis*

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Background: Toxin-antitoxin (TA) systems are known to work as a “poison-antidote” system, where the action of the antitoxin neutralizes the effect of the toxin counterpart. *mazEF* has been identified as a TA system in several species and is associated with the bacterial stress response. A previous study showed that the formation of viable but non-culturable (VBNC) cells in *S. epidermidis* biofilms might be linked to the gene cluster *mazEF*, raising interest in the study of the function of *mazEF* operon in this species.

Objectives: Since *mazEF* function as a TA system in *S. epidermidis* has been attributed based uniquely on protein homology with other species, herein we aimed to confirm whether the *mazEF* operon plays a role as a TA system by constructing a mutant in *S. epidermidis* 1457 background. Additionally, the effect of *mazEF* deletion on some virulence factors of this bacteria was also assessed.

Results: Interestingly, our results showed that *mazEF* did not act as a TA system, apparently playing a distinct role in *S. epidermidis*, as no toxic effect was verified upon expression of *mazF*, the putative toxin, in *mazEF*-mutant cells. Moreover, it seems that the *mazEF* operon has a minor impact on the antimicrobial tolerance of this strain, although we observed a link between *mazEF* deletion and expression of other known virulence genes.

Conclusions and significance: Although an indirect role in virulent gene modulation was found, our data suggest that *mazEF* is not a TA system and we failed to observe a direct role on virulence.

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