

## **Adaptation of mycoplasmas to antimicrobial agents: Acholeplasma laidlawii extracellular vesicles mediate the export of ciprofloxacin and a mutant gene related to the antibiotic target**

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### **Abstract**

This study demonstrated that extracellular membrane vesicles are involved with the development of resistance to fluoroquinolones by mycoplasmas (class Mollicutes). This study assessed the differences in susceptibility to ciprofloxacin among strains of *Acholeplasma laidlawii* PG8. The mechanisms of mycoplasma resistance to antibiotics may be associated with a mutation in a gene related to the target of quinolones, which could modulate the vesiculation level. *A. laidlawii* extracellular vesicles mediated the export of the nucleotide sequences of the antibiotic target gene as well as the traffic of ciprofloxacin. These results may facilitate the development of effective approaches to control mycoplasma infections, as well as the contamination of cell cultures and vaccine preparations. © 2014 Elena S. Medvedeva et al.

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