

**EV0290**

**ePoster Viewing**

**Resistance surveillance & epidemiology: MRSA, VRE & other Gram-positives**

### **Antibiotic resistance of lactic acid bacteria isolated from some Algerian food products**

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#### **Background:**

Resistance to antimicrobial drugs is a common characteristic in the world of bacteria. In the interaction between bacteria, genetic material is transferred from one bacterium to another; Lactic acid bacteria (LAB) colonize the gastrointestinal and urogenital tracts of humans and animals and are present in foods such as dairy products, fermented meats, fruits and vegetables. There is some concern that antibiotic resistance in LAB could then be transferred to possibly pathogenic bacterial species, complicating the treatment of a disease or infection and lead to the spread of antibiotic-resistant bacteria. In order to illustrate the current situation of antibiotic resistance, distinction between intrinsic and atypical resistances, and some of the genetic determinants, this study was conducted.

#### **Material/methods:**

In the first, we established the resistance profile of 51 strains of lactic acid bacteria isolated from some Algerian food products, camel milk, cow's milk, Green Olives, the chicken intestinal epithelial cells and raw beef. they were tested against 21 different antibiotics by antibiogram. The minimum inhibitory concentrations (MICs) were measured for five of these antibiotics. after isolating the plasmids carrying the gene for resistance to tetracycline by the electroelution method, they were used to transform an indicator strain (*Lactococcus lactis*) by electroporation. the stability of these plasmids in transformers were tested, and the variation of the level expression of tetracycline resistance were also examined in transformers.

#### **Results:**

The data sets collected concerning the exceptional antibiotic resistances were rare among the isolates studied, and the vast majority of the MIC values were below the FEEDAP breakpoints. Based on these phenotypic tests, the situation of the resistance / susceptibility of enterococci and lactococcus is relatively good. However, some strains of lactobacillus showed simultaneous high resistance to tetracycline, nitrofurantoin, bacitracin, and spiramycinafin, the research of mobile genetic elements has led us to detect in lactobacilli two plasmids contains tetracycline resistance gene. These plasmids, pCHM19 pCHTD29, were transferred by electroporation into indicator bacteria (*Lactococcus lactis*) and tetracycline-resistant transformers were obtained on selective medium. After horizontal transfer of resistance genes carried by these plasmids, the resistance can be expressed in the indicator. The stability of these plasmids in the transformers in the presence or absence of the selected agent varied by case. The expression level of resistance to tetracycline examined in solid medium, varied among clones.

#### **Conclusions:**

Lactic acid bacteria can play an active role in the spread of antibiotic resistance especially if it is carried by a mobile genetic element as a plasmid, a series of measures inspired a principle of

precaution should be taken before they are used as commercial starters cultures or probiotics in food, complemented by a more prudent use of antibiotics in agriculture, veterinary and human medicine.