

# *Identificazione degli Enterococchi e dei geni di resistenza Van tramite il sistema Phoenix e PCR*

**Lavoro di Diploma di:**

**Astrea Rossetti,  
Formazione Tecnico in Analisi Biomediche  
Scuola Superiore Medico Tecnica, Locarno  
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**Responsabili:  
Antonella Demarta  
AnnaPaola Caminada**

## Abstract

### Introduction:

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Enterococci are widespread present in commensal form some years now they have been recognized as pathogens in nosocomial infections. The number of nosocomial infections is increasing and more strains of Enterococci are resistant to glycopeptide antibiotics (such as vancomycin) hence difficult to treat. The purpose of this study was to establish the prevalence of the species of Enterococci and the resistance genes, in Ticino. We wanted to assess the validity of the Phoenix identification system for the simultaneous identification of Enterococci and the genes of vancomycin resistance.

### Materials and Methods:

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121 strains of Enterococci were isolated from routine clinical samples. 31 strains were not significant for the case of Phoenix identification was used. For the other strains the work continued with Multiplex PCR for the genes *ddl* and *vanC*. Multiplex PCR for the genes *ddl* and *vanC*. After every PCR an agarose gel electrophoresis was performed. For the doubtful results a sequencing of the *ddl* gene was performed and placed in a database and compared with the sequences. 3 strains were identified as belonging to the family of *Streptococcus* and were no longer considered.

### Results:

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Both the techniques of identification (Phoenix and Multiplex *ddl*) showed that the most common species is *E. faecalis* (90%). The most distant by *E. faecium* (6%). In total analysed, only 3 showed resistance to vancomycin in the *vanC* class.

### Conclusion:

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In Ticino as in the rest of Switzerland the most often isolated are *E. faecalis* and *E. faecium*. We were able to exclude the presence of other species in the clinical material. We saw that the problem of identification of Enterococci is particularly widespread. We were able to show that the Phoenix identification system does not allow discrimination of Enterococci with vancomycin resistance (if it is present). Further work was made with 2 separate studies.