

## **VIRULENCE FACTORS OF *ENTEROCOCCUS FAECALIS*: THE PROMOTERS FOR THEIR PATHOGENICITY**

***Joana Barbosa, Sandra Borges and Paula Teixeira\****

CBQF – Centro de Biotecnologia e Química Fina, Escola Superior de Biotecnologia, Centro Regional do Porto da Universidade Católica Portuguesa, Rua Dr. António Bernardino Almeida, Porto, Portugal

### **ABSTRACT**

Enterococci are natural inhabitants of the intestinal microbiota of humans and animals. They can survive in many environments contaminated with human or animal faecal materials (such as water, soils receiving and any surfaces) as well as food products derived from animals. They are important causes of community-acquired and nosocomial infections, such as urinary tract infections, endocarditis and bacteraemia. Among enterococcal diseases, the majority are associated with *Enterococcus faecalis* species. Several factors are associated with a high risk of acquiring enterococcal infections, including antimicrobial resistance and expression of virulence determinants. The most known virulence factors are enterococcal surface protein, aggregation substance, cell wall adhesins, sex pheromones, production of extracellular superoxide, production of hydrolytic enzymes (such as gelatinase), secretion of cytolysin, production of biofilm, among others.

To cause infection, *E. faecalis* must have virulence traits which allow the infecting strains to colonize and invade host tissue and translocate through epithelial cells and evade the host's immune response.

This review explores the importance of the presence of virulence factors for understanding the potential pathogenic activity of *E. faecalis*.

---

\* Corresponding author: CBQF – Centro de Biotecnologia e Química Fina, Escola Superior de Biotecnologia, Centro Regional do Porto da Universidade Católica Portuguesa, Rua Dr. António Bernardino Almeida, 4200-072 Porto, Portugal; Tel +351 225 580 001; Fax: +351 225 580 111; e-mail: pteixeira@porto.ucp.pt