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Poster

## Development and evaluation of a sandwich-type ELISA for multiple and simultaneous detection of five foodborne pathogenic bacteria



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### ABSTRACT

The incidences of foodborne diseases caused by contamination with bacteria have increased in recent years. Food contamination can occur at any point along the food chain, from the primary production of the food, to its arrival to the final consumer [1]. Faced with this health problem, the food sector needs to perform microbiological determinations to maintain the food quality and safety. Pathogenic bacteria are found in different types of food matrices, both in raw foods that have not received any type of treatment, as in those cooked ready to eat [2], so it is essential to detect their presence. In Europe, these microbiological tests, carried out in quality control laboratories, are regulated by Regulation (EC) 2073/2005, which guarantees a safe supply for consumers health. Currently, several methods are used for foodborne bacterial pathogens detection, both conventional and rapid detection methods. Immunological-based methods stand out, due to their versatility and effectiveness although they present important limitations. Therefore, this work proposes the development of an optimized immunological-based method, based on the interaction between antibodies and antigens, that allows multiple and simultaneous detection of bacteria with higher incidence and risk in the population. These bacteria are *Campylobacter jejuni*, *Escherichia coli* O157: H7, *Listeria monocytogenes*, *Salmonella typhimurium* and *Staphylococcus aureus* [3]. Moreover, it also aims to reach high detection limits in a fast and simple way. The implementation of this project would be a great advance for the control of the quality of the food sector, guaranteeing a safe supply and minimizing the appearance of foodborne diseases.

### REFERENCES

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