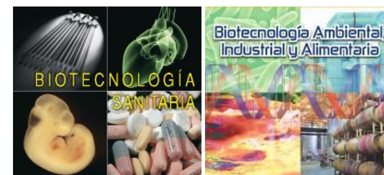
Poster



Validation of a qualitative method of Listeria monocytogenes detection in a food matrix according to ISO 17025 and ISO 11290-1

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ABSTRACT

Motivation:

Listeria monocytogenes is a bacterium that is mainly transmitted through contaminated water and food. It can cause listeriosis in susceptible populations such as pregnant women, neonates, the elderly and immunosuppressed individuals.
In recent years, there has been an increase in the incidence of this disease, so, to safeguard public health, it is very important to have a fast and secure method of detection and identification of L. monocytogenes in contaminated products [1].
Therefore, the main objective of this study is to perform a secondary validation of a qualitative method of L. monocytogenes detection on five food matrices.

Methods:

As a general rule for the cultures preparation, it will be used the European and International Standard method for detection and enumeration of Listeria monocytogenes (EN ISO 11290-1) [2], with the use of a chromogenic agar, the "Agar Listeria according to Ottaviani and Agosti" (ALOA) [3]. In addition, it will be used the UNE-EN ISO 17025 Standard.
A commercial strain of L. monocytogenes will be used.
In order to determine the detection limit of the validation method, some chicken samples will be inoculated with L. monocytogenes at different concentrations.
Having calculated this parameter, it will be chosen the concentration to inoculate the samples of each matrix. In addition, it will be done negative controls with Staphylococcus aureus contaminated samples.
The artificially contaminated samples will be cultured in ALOA medium and incubated at 37 °C for 24 hours.
The L. monocytogenes growth in each plate, will be ratified with confirmatory tests.
Finally, it will be calculated the next parameters: sensitivity, specificity, false negatives, false positives and efficiency.

Results:

The parameters calculated were: detection limit of <10 ufc/25 g, 94% sensitivity, 98% specificity, 2% false positives, 5,7% false negative and 96% efficiency.

Conclusions:

It is concluded that the analytical technique has been applied properly in the laboratory, obtaining high efficiency values. Therefore, this method of L. monocytogenes detection would successfully validated for its use in this laboratory.

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