Title: Detection of *Listeria monocytogenes* in RTE fish base products by real time PCR and comparison and ISO11290-1 method.

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Abstract:

Seafood is an extremely important food in the human diet, due to its high nutritional value, contributing to the preservation of human health. However, these foods, especially ready to eat (RTE) fish-based products could become dangerous vehicle for infectious agents such as *Listeria monocytogenes (L. monocytogenes)*. This micro-organism is considered as the etiological agent of food illnesses with hight potential risk to the consumers health, especially pregnant women, elderly and immunocompromised. Conventional methods for *L. monocytogenes* in these products, such as ISO 11290-1, still widely used in Brazil, has laborious, hight time consuming and reduced sensitivity. Current molecular techniques, such as real-time PCR, for example, are extremely sensitive, fast and effective for the detection of foodborne pathogens. On that basis, this study aimed to detect the presence of *L. monocytogenes* in fish-based product sample using a protocol (*in house*) of a molecular technique: the real-time PCR. The results were compared to those obtained with the conventional technique acoording to ISO 11290-1. There were analyzed ninety samples of the fish-based products sold in supermarkets from the coast of Santa Catarina. The samples included nine types of fish products, which were: ten samples of tuna pizza, ten samples of kani, ten samples of codfish balls, ten samples of fish dumpling, ten samples of fish burger, ten samples of fish fillet, ten samples of baked seafood, ten samples of hake nuggets and ten samples of nuggets kids. The molecular detection of *L. monocytogenes* was conducted with an in house protocol, using a primer and probe previously described and tested. *L. monocytogenes* was detected in eight samples (8.88 %) by real time PCR *in house* protocol and in six samples (6.66 %) by ISO 11290-1 technique. The products which had positive samples were tuna pizza, codfish balls, fish fillet and fish balls. The results showed a high incidence of *L. monocytogenes* in RTE fish-based products, and indicate an increased sensitivity of real time PCR analysis compared to conventional methodology in a shorter time.

Keywords: *L. monocytogenes*, Real-time PCR, Seafood products; RTE;

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