# **Titre d’article**: *Influence of some parameters on the ability of Listeria monocytogenes, Listeria innocua, and Escherichia coli to form biofilms*

**Abstract :**

Aim: The present study was conducted to evaluate the capacity of Listeria monocytogenes (L.m), Listeria innocua (L.i), and Escherichia coli to form biofilms on polystyrene support under different parameters by performing crystal violet (CV) staining technique. Materials and Methods: Different suspensions were prepared with single strains and with multiple combinations of strains including two serogroups of L.m (IIa and IIb), L.i, and E. coli strains at different microbial load. Selected strains and combinations were grown in biofilms for 6 days attached to polystyrene microplates under aerobic and microaerophilic conditions. The evaluation of the power of adhesion and biofilm formation was determined by CV staining followed by the measurement of optical density at 24 h, 72 h, and 6 days incubation time with and without renewal of the culture medium. Results: All the strains tested, presented more or less adhesion power depending on the variation of the studied parameters as well as the ability to form multispecies biofilms. Their development is more important by renewing the culture medium and increasing the initial load of bacteria. The ability to adhere and form biofilms differs from one serogroup to another within the same species. In bacterial combination, strains and species of bacteria adopt different behaviors. Conclusion: The ability to form biofilms is a key factor in the persistence of tested strains in the environment. Our study showed that L.m, L.i, and E. coli could adhere to polystyrene and form biofilms under different conditions. More researches are necessary to understand the mechanisms of biofilm formation and the influence of different parameters in their development.