

## Biofilm Formation in the Case of *Lactobacillus sp.* IL2

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**Keywords:** biofilm, exopolizaharide, *Lactobacillus*

### SUMMARY

The study uses a probiotic strain, *Lactobacillus sp.* IL2, to highlight exopolysaccharides synthesis and the formation of biofilm so as to obtain a product that can be used in the control of human intestinal microflora. [1] The recent studies show that the structure and dynamics of the biofilm vary according to the strains it is composed of, as well as to the surface on which it attaches and the nutritional factors. The exopolysaccharides also play a determinative role in the capacity of biofilm formation through their structure. [2] The impact of the environmental factors on the capacity to form biofilm was tested. Therefore, in order to highlight this link, polysaccharides were isolated through ethanol precipitation. The testing of the capacity to form biofilm was made through monitoring the adhesion to a abiotic surface. The capacity of biofilm formation as well as exopolysaccharides' synthesis, are highly influenced by the growth conditions of the strain. From the data obtained, it results that glucose determines a maximum synthesis of exopolysaccharides, as well as a maximum capacity to form biofilm, compared to the usage of lactosis or sucrose. A reduced pH, high quantities of salt, the presence of mucin or biliary salts influence this capacity in different ways. Biliary salts with a concentration lower than 1% have a positive effect, significantly stimulating this capacity, while the presence of NaCl and of mucin does not have a significant importance, compared to the standard environment MRS – glc. The same characteristic can be also noticed in the case of exopolysaccharides synthesis. Comparing the data obtained and the data from literature it can be concluded that the strain can be used to produce functional probiotic products, with role in the modulation of human intestinal micro-flora.

*Acknowledgments.* The work was supported by a grant from the CNCSIS Romania – PNCDI II Idei Grant no. 39.

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