Post-doctoral position starting on November 1st, 2019

at Ifremer Atlantic Center of Nantes, France

Encapsulation of active compounds (e.g. molecules, cells) inside a matrix allows to protect them against external degradation conditions and offers the possibility for their sustained delivery, thus favoring to preserve the bioactivity of molecules or extend the life-span of cells. The encapsulation constitutes a highly efficient approach in food and tissue engineering applications. Biocompatible and biodegradable natural polymers such as polysaccharides appear as good candidates for the development of such encapsulation matrices. In this context, the goal of the post-doctoral project, being a part of ANR 2017 *FunCapsul* project, is to elaborate functional matrices for encapsulation of proteins (growth factors) and cells (lactic acid bacteria) based on exopolysaccharides (EPS) synthesized by marine bacteria (Figure 1).

The selected candidate will firstly be involved in EPS structuring into gelled micro-matrices using a microfluidic tool. In the following step, one model specie of lactic acid bacterium, displaying anti-listeria properties, will be encapsulated within the optimized micro-matrices for food applications. Viability of released bacterial cells will then be assessed. In parallel, two growth factors used in regenerative medicine to repair the damaged tissues will also be encapsulated. The amount of growth factors released from micro-matrices in different media will be assessed using ELISA tests.

Keywords: polysaccharides, glycosaminoglycan, gelation, microfluidics, cell and molecule encapsulation, controlled release, ELISA test.

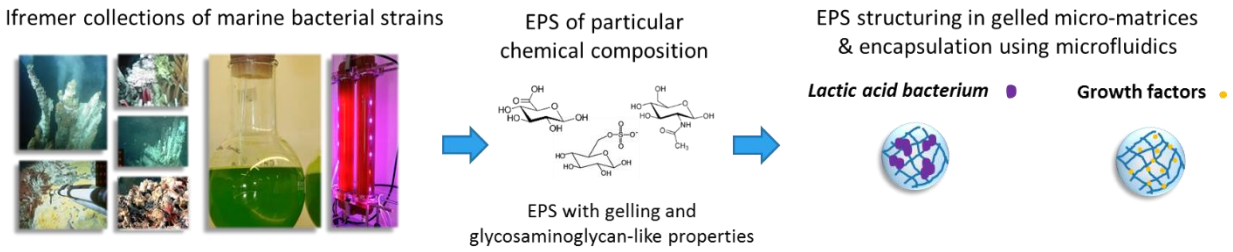

Figure 1. Main objectives of the *FunCapsul* project.

Profile: Applicants should hold a PhD in physico-chemistry of biopolymers; skills in microfluidics, analytical chemistry and biochemistry are also required.

Duration: 12 months

To apply, please send a CV and a cover letter to:
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