

Aline Debrassi

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Project	Biofunctionalization of porous aluminum oxide for targeted capture and growth of microbes
Fields of interest	Surface chemistry, organic chemistry, carbohydrate chemistry, microbiology
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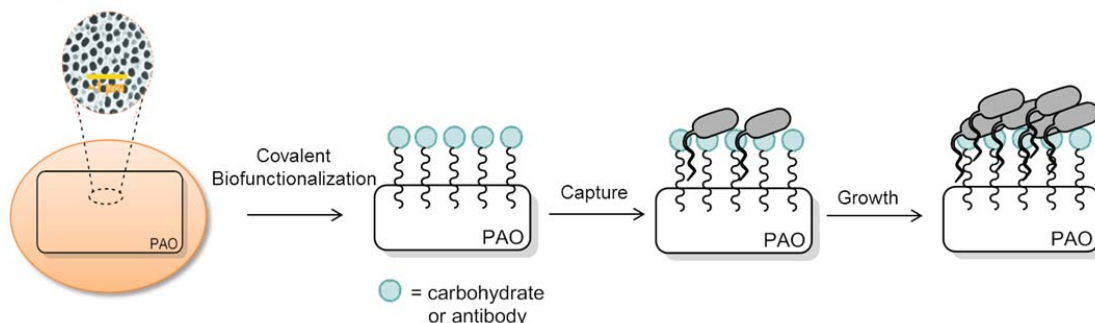


Introduction

Porous aluminum oxide (PAO) is a nanoporous material used for many biotechnological applications, including culture of microorganisms and other types of cells. Considering this application, the PAO surface can be modified to selectively capture some microorganisms which can then be further cultured. Functionalization of the PAO surface with biomolecules, such as antibodies and carbohydrates may enable this selective capture due to the specific binding properties.

Goal

The aim of this project is to attach carbohydrates and/or antibodies to the PAO surface and to test the biofunctionalized PAO for selective capture and growth of microbes.



Progress achieved

The various ways of modifying the PAO surface have been explored and their stability has been studied. In parallel, the PAO surface was modified to present a mannose and the growth of bacteria on the modified PAO was studied.

Further research

The next goal is to attach other sugars (fucose and galactose, for example) on the PAO surface and to test the selective capture of bacteria that present sugar-binding proteins. The functionalization of PAO with antibodies will also be studied.

Acknowledgements

We thank Microdish and Podiceps, partners in this project, and NanoNextNL for the financial support.