

Influence of the Carbon Source on Sporulation Genes in *Bacillus* species

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Bacillus probiotic have been extensively studied and isolated since many years from different food products. Although generally used in dairy products, they also widely used in various commercial food such as fermented meats, cereals, baby foods, fruits juices and ice creams.

The interest to study the *Bacillus* species is related to their ability to produce spores that have several advantages compared to non-spores-forming *Lactobacillus* species which are used as probiotics. Their benefits are linked to spore resistance to heat, chemical agents and enzyme degradation. In the form of spore, *Bacillus* species can be stored at room temperature, without any deleterious effect on their viability. They can survive in acid conditions of the stomach and so grow in the intestines in which they can play the role of probiotics.

In the present study, we follow the expression of *spoIIE* gene, which plays a crucial role in *B. subtilis*, *B. licheniformis* and *B. coagulans* sporulation, by following the expression of a chimeric *gfp* gene under the control of *spoIIE* promoter. In our studies, cultures were carried out in Erlenmeyer flasks (250 ml), in the absence and in presence of two carbon sources: glucose and xylose.

Our results shows that in both *B. licheniformis* DSM13 /*PspoIIE-gfp* and *B. subtilis* *PspoIIE-gfp*, the expression of *spoIIE* gene was slightly affected by the presence of xylose in the culture media. While the presence of glucose inhibit the expression of *spoIIE* gene and the sporulation of the strain.

Biography:

Kabanyana Jeanne-Françoise was born in Rwanda, in 1977. She received the advanced diploma in biomedical sciences from Kigali health Institute, in 2004, and the bachelor degree in biotechnology in Institute of higher education of Ruhengeri, in 2010.

Since 2006 till 2012 she has worked in Rwanda standard board as quality testing laboratory officer. In october 2012, she joined the University of Liège where she received the master's degree in biochemistry, molecular and cellular biology, bioindustry specialisation, in 2014. Her current Ph.D. research interest include *Bacillus* probiotics, bacteria transformation and spore production.