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## Selection of filtering agent and filter cloth to separate cells of probiotic yeast using a monophasic filter system

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The efficiency of separation operations is a critical point to determinate the yield and economic viability of a production process. Because of this, the selection of adequate operation parameters become an important part of the design of a new bioprocess. In this work, the evaluation of the compatibility of two filtering agents over cells of yeast of *Meyerozyma guilliermondii*, a potential prebiotic yeast isolated in Colombia, was conducted. After the filtering agent was selected, the efficiency of separation was determined over different filter cloth on a monophasic filter system. Firstly, 50mL of fermented broth with yeast cells were put in contact with two filtering agents, codified as glass beads and kaolin, at 4 concentrations (0.5, 1, 1.5 and 2.5% w/v). Three hours later, the cellular viability was determined on YMA. The efficiency of separation was computed using four filter cloth references sold by Andritz®: 211, 275, 292 and 351, at a constant concentration (1% w/v). As a result, glass beads had no negative effect on cellular viability in any of the concentration evaluated. Furthermore, kaolin had an average reduction of  $1\pm 0.5\%$  of cellular viability due to its properties as a disinfectant. During the efficiency evaluation, the glass beads could not retain yeast cells due to its low particle size respect to the pore diameter of the filter cloth evaluated, reducing the chance of filter cake formation. Nevertheless, the kaolin presented an efficiency of 41.59% with the filter cloth reference 211. To conclude, kaolin at a concentration of 1% w/v guaranteed a low reduction of cellular viability but not a good separation efficiency using the filter cloths evaluated, therefore, a new group of filter cloth or a combination of filtering agents could be evaluated to increase the efficiency of separation.

### Biography

Master in Chemical Engineering with four years of experience in formulation and execution of research projects for the development of bioproducts and / or innovative bioprocesses with high added value to the market. Advanced knowledge in the design of bioprocesses and scaling of unit operations such as fermentation, separation and formulation.

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