TITLE: DETERMINATION OF THE BACTERIAL STRAIN PARTITION COEFFICIENT DATA *Lactobacillus acidophilus* ATCC 4356 IN AQUEOUS TWO-PHASE SYSTEMS FORMED BY NATIVE DEXTRAN AND BY PVA (VINYL POLYACETATE).

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Summary:

The main drivers of biotechnology are economic demand and advances in science and technology, which creates new markets, solve emerging and old problems, and improving the cost and efficiency of industrial processes. The biotechnological potential of the micro-organisms are being given increasing attention from the international scientific community. Many of these organisms have a differential metabolism, metabolic substances producing large exploration, like the exopolysaccharides (EPS). The group of lactic acid bacteria has different producing species exopolysaccharides, especially those inhabiting regions extremophiles, as they are considered the semi-arid regions. An important applicability of EPS is in the process of microencapsulation of biological source materials, but for this process to be effective it will be necessary that the encapsulating agent is preferably protected inside the microcapsule. One of the effective methods for such entrapment to occur, is the use of two immiscible polymers and different properties to give a two phase system. Thus, the project aimed to the use of aqueous two-phase systems using the vinyl polyacetate (PVA) and an exopolysaccharide, labeled dextran, produced by Leoconostoc pseudomesenteroides R2, aimed at microencapsulation microorganisms. To this end, emulsions containing the mixture of these two polymers were prepared in concentrations of 2%, 4%, 6%, 8% and 10% for determine system equilibrium point, after being incorporated viable cells of Lactobacillus acidophilus ATCC 4356 determined cells viability and determined in both phases of the biphasic system the partition coefficient. According to the results, the concentration of 8% of the two polymers was obtained where the balance point between the two phases. Since the microorganism remained immobilized in greater concentration in the dextran-containing phase. Therefore, the use of the biphasic aqueous system using these two polymers showed an alternative excellent immobilization of bacterial cells to promote encapsulation, protecting the microorganisms from environmental elements.

Keywords: lactic acid bacteria, exopolysaccharides, microencapsulation.

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