

**RELATIONSHIP BETWEEN CASEINATE/CARRAGEENAN EDIBLE  
FILM AS LACTIC ACID BACTERIA CARRIER AND ITS  
ANTIMICROBIAL ACTIVITY AGAINST PATHOGENS IN VITRO:  
EFFECT OF CARRAGEENAN TYPE**

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**ABSTRACT**

Edible films can be elaborated with proteins and/or polysaccharides. Composite edible films combine the functionality of each component, enhancing physical properties. In this research edible films were elaborated with sodium caseinate and different types of carrageenan (iota, kappa or lambda), to manipulate the interaction among them as carrier of lactic acid bacteria. Lambda carrageenan resulted in less soluble and tougher edible films, due to their higher sulfate group content and higher interaction with proteins. Higher solubility and hence a less ductile film structure enhanced *P. pentosaceus* bacteria viability and its antimicrobial activity, at least for *Listeria* and *E. coli*. The solubility and structural characteristics of caseinate edible films can be manipulated depending on carrageenan type employed, to enhance their capacity to active packaging for probiotic bacteria.