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Chitosan-glutaraldehyde activated calcium pectinate beads as a covalent immobilization support

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ABSTRACT.

Chitosan (Chi) and glutaraldehyde (GA) were employed, for the first time, during the activation of calcium pectinate (CP) beads. The activated beads were able to covalently immobilize the model enzyme, β -D-galactosidase (β -gal). They also exhibited much higher mechanical stability than the unactivated CP beads. Different Chi samples of different molecular weights and degrees of deacetylation (DD) were tested for their efficiency as CP activators. Moreover, the Chi-GA activation process was optimized using the Box Behnken design which predicted that activating the CP beads with a 0.6% Chi solution of pH 3.41 and a 4.74% GA solution would allow for the attainment of 6.87

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