

Chitosan-Alginat-Aloe Vera Biomembran for Wound Dressing Applications

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Abstract

Biomembran is one type of wound dressing. Wound dressing is usually used in healing wounds and can create good conditions in the process of wound healing. The raw materials used for making these biomembranes are chitosan, alginate, and aloe vera. This study aims to examine biomembrane processing and analyze the physical-chemical properties of biomembrane. The process of making this biomembrane is by mixing all the raw materials, namely chitosan: alginate: aloe vera with a ratio of 40:60:40; 50:50:40; 60:40:40; 70:30:40; and 80:20:40. Then proceed to the stage of printing using glass molds and then dried using an oven. Biomembranes produced were carried out several tests such as for absorption test the value obtained was 73%; 131%; 167%; 258%; and 267% for each of the above comparisons, and for membrane thickness the value obtained is 0.09 mm; 0.0867mm; 0.0833 mm; 0.07mm; 0.0667mm, and for the swelling test the value obtained is 100%; 122.2%; 140%; 200%; 225%, and for analysis of this biomembrane FTIR group contains alkyl halides, CH bonds, alkyl amine groups, NO₂ bonds, CO/CH bending groups, NO₂ bonds, alkene (C = C), alkaline compounds (C≡C), compounds alkanes (CH), and amine compounds, amides (NH).

Keywords

Chitosan, Alginat-Aloe Vera, Biomembran, Wound, Dressing Applications