

Mass Transfer of Paracetamol from the Crosslinked Carrageenan-Polyvinyl Alcohol Film

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Abstract : In this research, carrageenan extracted from seaweed *Eucheuma cottonii* was mixed with polyvinyl alcohol (PVA) and then crosslinked using glutaraldehyde (GA). The obtained hydrogel films were applied to control the drug release rate of paracetamol. The aim of this research was to develop a mathematical model that can be used to describe the mass transfer rate of paracetamol from the hydrogel film into buffer solution. The effect of weight ratio carrageenan-PVA (5: 0, 1: 0.5, 1: 1, 1: 2, 0: 5) on the parameters of the mathematical model was investigated also. Based on the experimental data, the proposed mathematical model could describe the mass transfer rate of paracetamol. The weight ratio of carrageenan-PVA greatly affected the amount of paracetamol absorbed in the hydrogel film and the mass transfer rate of paracetamol.

Keywords : carrageenan-PVA, crosslinking, glutaraldehyde, hydrogel, paracetamol, mass transfer

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