

Insights: Publications

Study of Pneumococcal Surface Protein, PspA, Incorporated in Poly (Vinyl Alcohol) Hydrogel Membranes

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This study investigates poly (vinyl alcohol) (PVA) membranes as controlled release micro-matrices, which can be useful in therapeutic applications for optimizing the administration of drugs. Currently, the use of hydrogels is limited by protein size. This study investigates the delivery of PspA, a large protein of approximately 38 kD. Pneumococcal surface protein A (PspA) has been shown to provide protective immunity against pneumococcal infection and is considered as a pneumococcal vaccine. The protein release experiments demonstrated that from an initial pH 7.4, approximately 60% of PspA diffuse into a neutral environment with an initial burst and a declining rate reaching equilibrium. The results indicate that the protein was successfully incorporated and released from the membrane over time. The hydrogel and protein interaction is temporary, and the membrane system is ideal for protein drug delivery. The data confirm that the protein did not aggregate and was active after release. The protein release is promising and a step forward to develop microneedles to facilitate high molecular weight protein delivery as well as vaccine delivery.

Related People



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