

Development and In Vitro - In Vivo Evaluation of Composite Hydrogel-Forming Microneedles Containing Diclofenac Sodium with Box-Behnken Design Using SLA 3D-Printed Microneedle Molds

Drug Delivery and Translational Research

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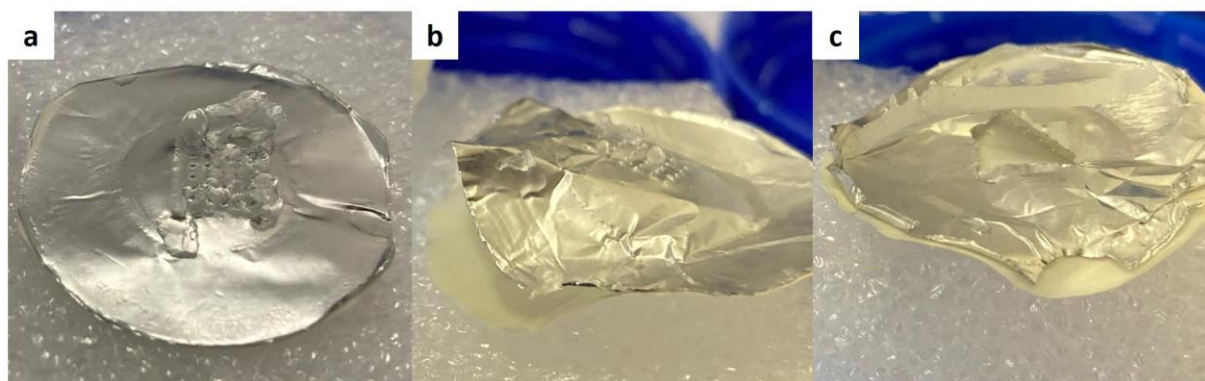


Fig. S1 Images of F22 (a), F23 (b), and F24 (c) after removal from the Franz cell at the end of in vitro drug release study. It was observed that, while F22 and F23 could not maintain structural integrity at the end of in vitro drug release, F24 preserved its structural integrity.

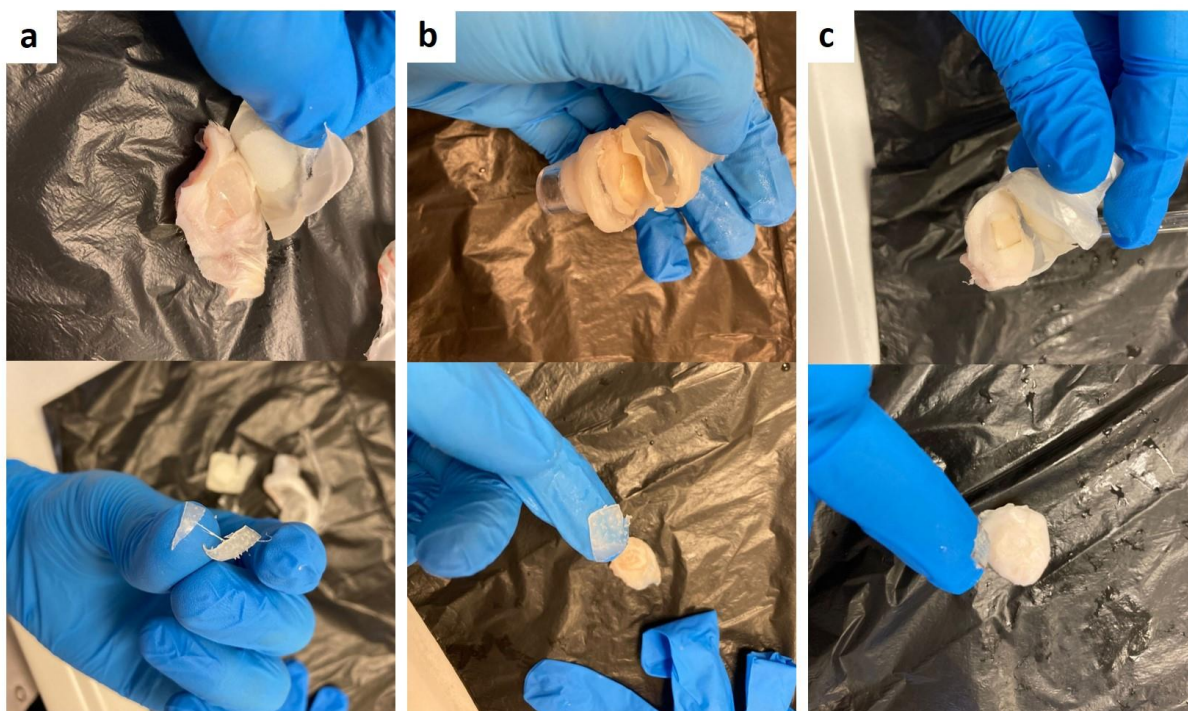


Fig. S2 Images of F22 (a), F23 (b), and F24 (c) after ex vivo permeability study. The images at the top and the bottom of the figure are the HFMs before and after they peeled off from the skin, respectively. It has been observed that as the crosslinking level of HFMs increased (from F22 to F24), swelling degrees were enhanced, and structural integrities were compromised.

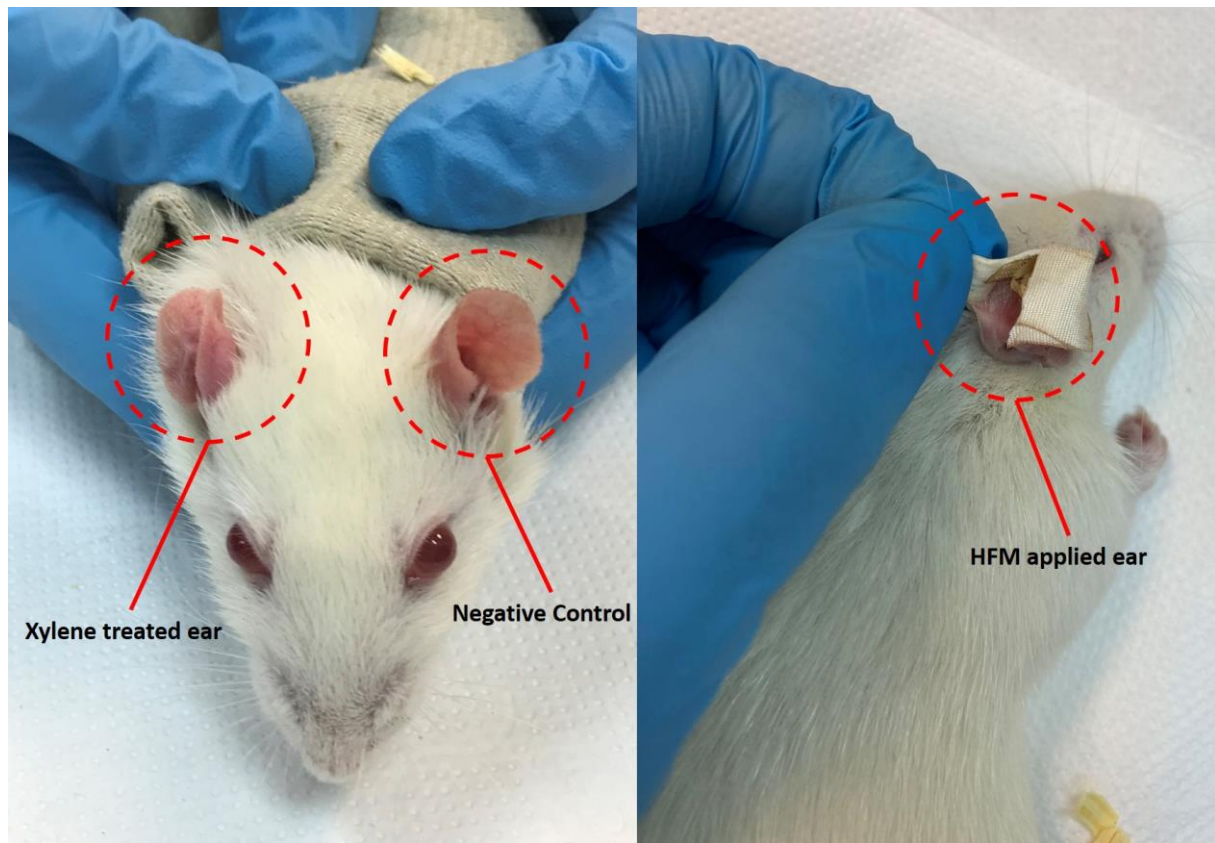


Fig. S3 Images of male Sprague Dawley rats' ears in which xylene was applied (positive control), nothing was applied (negative control), and HFM was applied (HFM control). The photograph on the left of the figure was taken 5 minutes after xylene treatment, whereas the photograph on the right was taken 24 hours after HFM application.

Table S1 pH values of polymer mixtures of optimum formulations

Polymer mixtures	pH
F22	1,60
F23	1,55
F24	1,72