Facile modification of polycaprolactone nanofibers with egg white protein

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samples. The swelling test showed that PCL/EWP nanofibers have higher water uptake than PCL nanofibrous mats. Also, EWP addition on the nanofibrous mats resulted in an increase in the tensile strength and Young's modulus of the mats, indicating that the presence of protein can greatly enhance the mechanical properties of the mats. A significantly higher, more uniform, and dispersed cell spreading was observed on days 7 and 14 than that on neat PCL mats, demonstrating the importance of providing the required cues for cell homing by the availability of EWP. Hence, EWP is shown to be a simple and low-cost source for the functionalization of PCL nanofibrous mats. EWP is, therefore, a facile candidate to enhance cellular interactions of synthetic polymers for a wide range of tissue engineering applications.

[GRAPHICS]

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