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**Protective Therapeutic Effects of Peptide Nanofiber and Hyaluronic Acid Hybrid
Membrane in *in vivo* Osteoarthritis Model**

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Abstract

Osteoarthritis (OA) is a condition where tissue function is lost through a combination of secondary inflammation and deterioration in articular cartilage. One of the most common causes of OA is age-related tissue impairment because of wear and tear due to mechanical erosion. Hyaluronic acid-based viscoelastic supplements have been widely used for the treatment of knee injuries. However, the current formulations of hyaluronic acid are unable to provide efficient healing and recovery. Here, a nanofiber-hyaluronic acid membrane system that was prepared by using a quarter of the concentration of commercially available hyaluronic acid supplement, Hyalgan[®], was used for the treatment of an osteoarthritis model, and Synvisc[®], which is another commercially available hyaluronic acid containing viscoelastic supplement, was used as a control. The results show that this system provides

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