

Mesoporous Hyaluronic Acid Membrane by Electrospinning Method

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Hyaluronic acid (HA) is known as a biocompatible and non-toxic polysaccharide. It is crucial for many cellular and tissue functions and has used in clinical use for tens of years. So HA-derived hydrogels have been used to deliver cells and therapeutic agents for tissue repair and regeneration. Here, we introduced the electrospinning for a method of forming membrane structures. The strong water absorptivity of HA makes it hard to use for electrospinning. So thereby mixing DMSO with DW in proper ratio, we made HA solution that has proper viscosity for electrospinning. For enhancing the stability of membrane, we introduced an ethanol bath which enables HA nanofibers being jetted out to crosslink in real time. The ethanol bath is located on the surface of collector plate and it contains ethanol which can maintains HA microstructure itself and EDC which initiates the crosslink. Finally, we confirmed the crosslinked structure via FT-IR spectra and the optical condition for mesoporous HA membrane via SEM images.