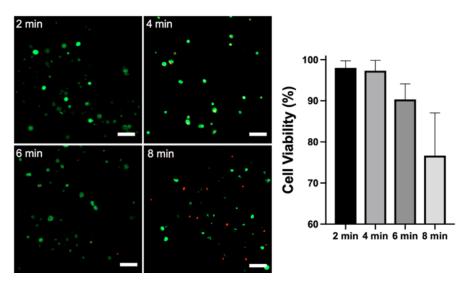
Copyright WILEY-VCH Verlag GmbH & Co. KGaA, 69469 Weinheim, Germany, 2018.

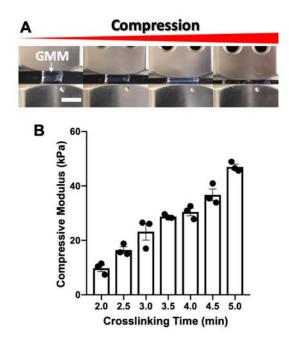
## Supporting Information

## A Patch of Detachable Hybrid Microneedle Depot for Localized Delivery of Mesenchymal Stem Cells in Regeneration Therapy

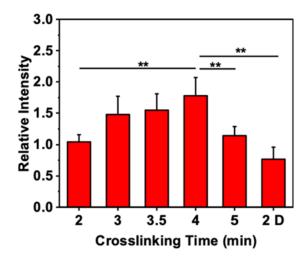
KangJu Lee<sup>\*</sup>, Yumeng Xue, Junmin Lee, Han-Jun Kim, Yaowen Liu, Peyton Tebon, Einollah Sarikhani, Wujin Sun, Shiming Zhang, Reihaneh Haghniaz, Betül Çelebi-Saltik, Xingwu Zhou, Serge Ostrovidov, Samad Ahadian, Nureddin Ashammakhi, Mehmet R. Dokmeci, Ali Khademhosseini<sup>\*</sup>



**Figure S1.** The viability of MSC within GMM with respect to the different crosslinking time from 2 to 8 min using 14 mW/cm<sup>2</sup> of UV (scale bar = 100  $\mu$ m). All data are presented as the mean  $\pm$  SD.



**Figure S2.** (A) Representative images of compression test of GMM disk (scale bar = 10 mm). (B) Raw data of compressive modulus of GMM disks with respect to the UV crosslinking time. All data are presented as the mean  $\pm$  SD.



**Figure S3** Results of a CCK-8 assay of MSC viability within GMMs crosslinked for 2 to 5 min. The 2D control is MSCs grown on GelMA substrate crosslinked for 4 min. \*\*p < 0.01, All data are presented as the mean  $\pm$  SD.

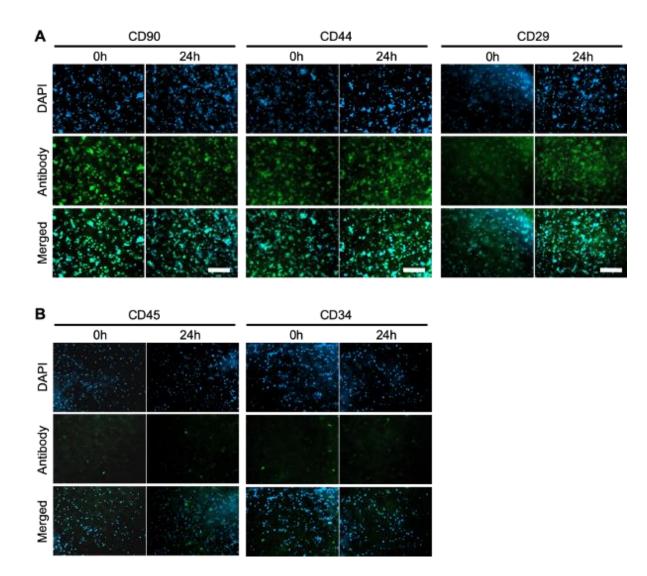


Figure S4 Representative images of histologic samples stained by stemness-related antibodies in Figure 5E.

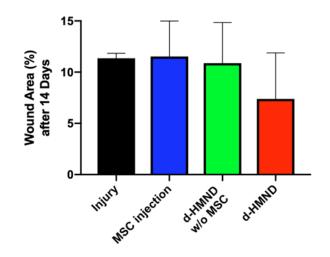


Figure S5 Wound area of each group after 2 weeks.