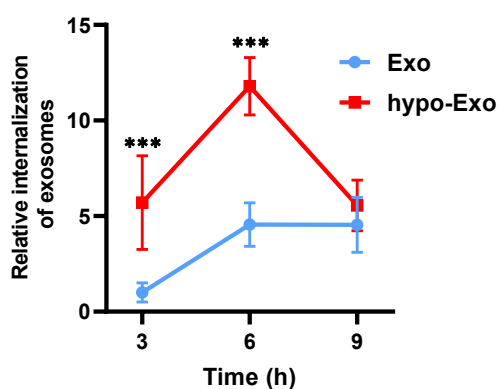
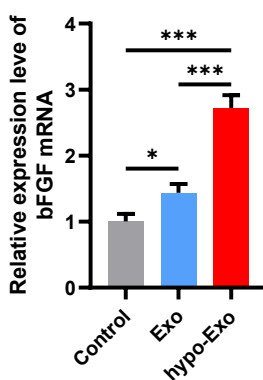


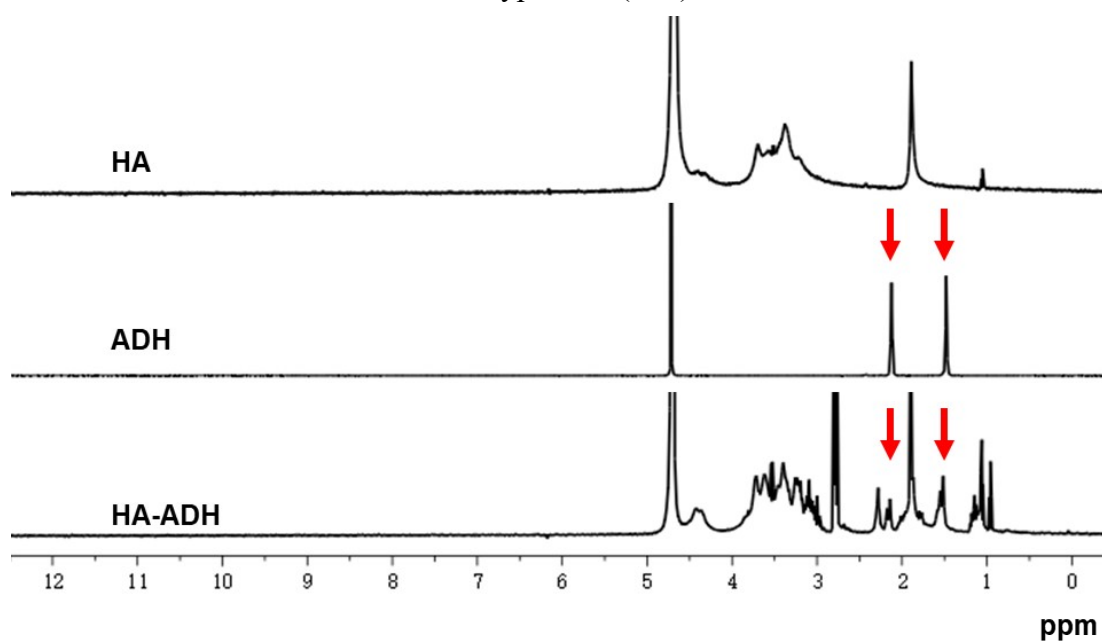
**Fig. S1** Simple Western lane view of hypo-Exo and Exo tested with anti-CD9 and anti-CD63 primary antibodies.



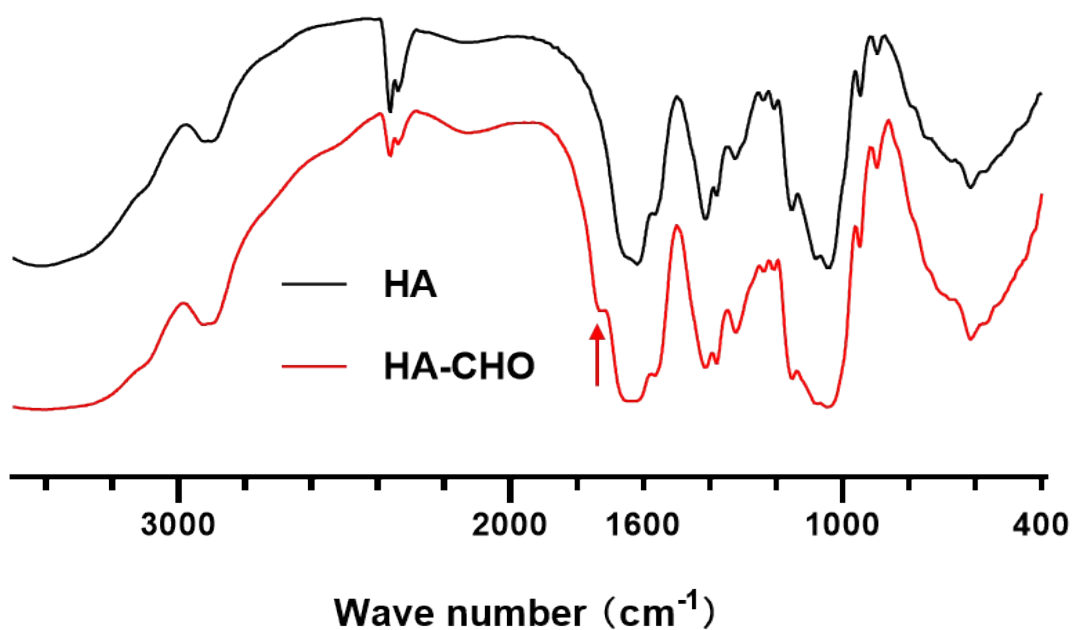
**Fig. S2** Statistical analysis of intracellular exosomes fluorescence in HUVECs at various time (n=9).



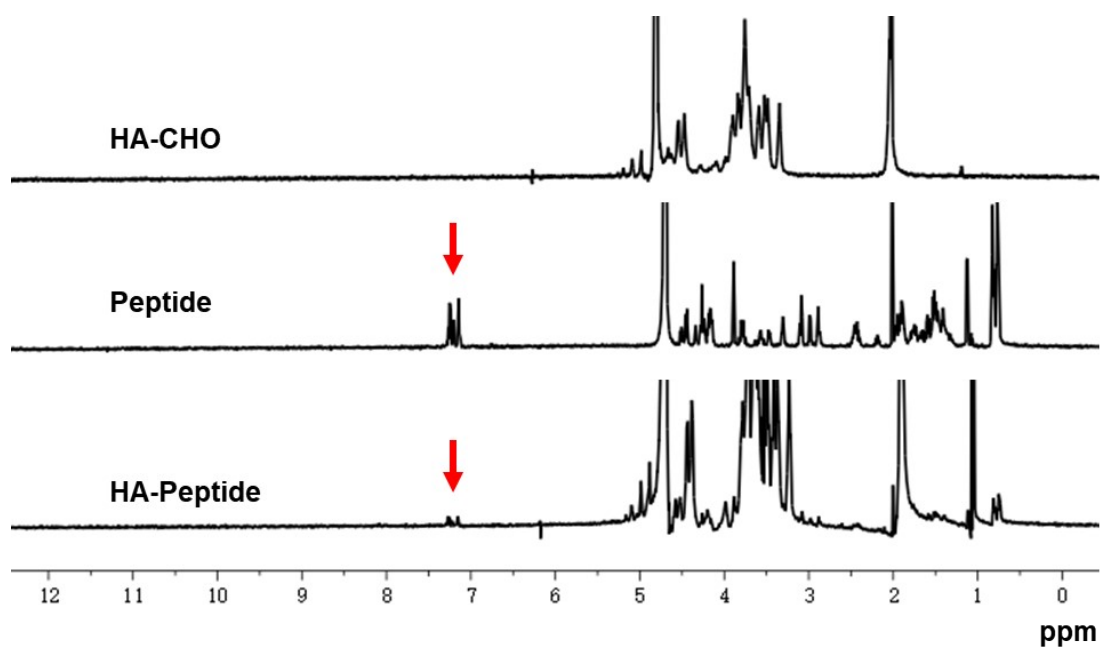
**Fig. S3** Quantitative analysis of bFGF mRNA in HUVECs treated with PBS, Exo, and hypo-Exo (n=3).



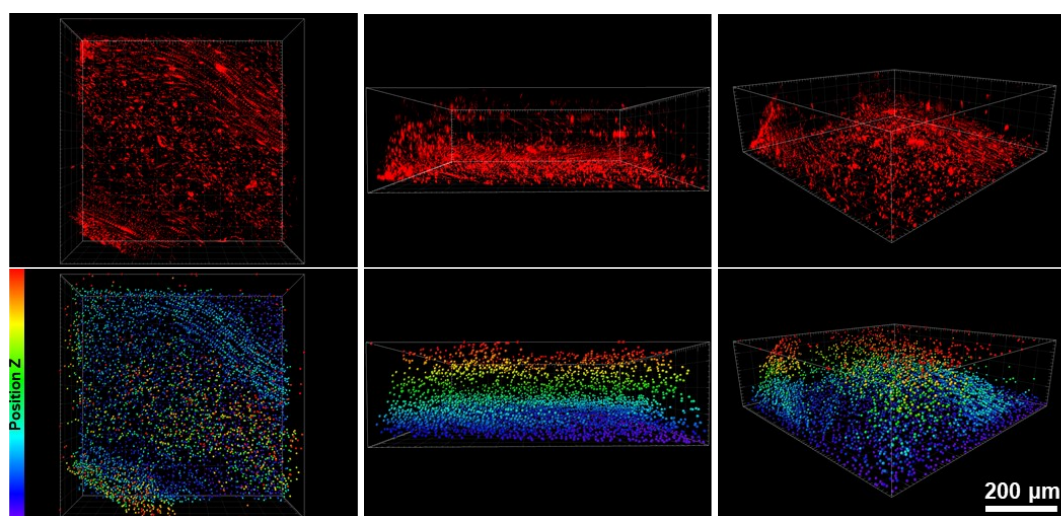
**Fig. S4** <sup>1</sup>H NMR characterization of HA-ADH. Red arrows indicated related characteristic peaks of free ADH and HA-ADH.



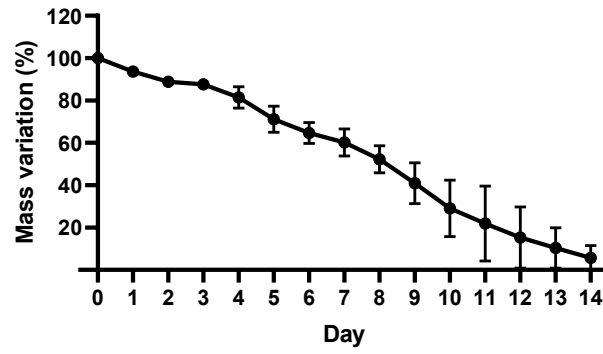
**Fig. S5** FTIR characterization of HA-CHO. Red arrow indicated carbonyl absorption peak in the oxidized HA.



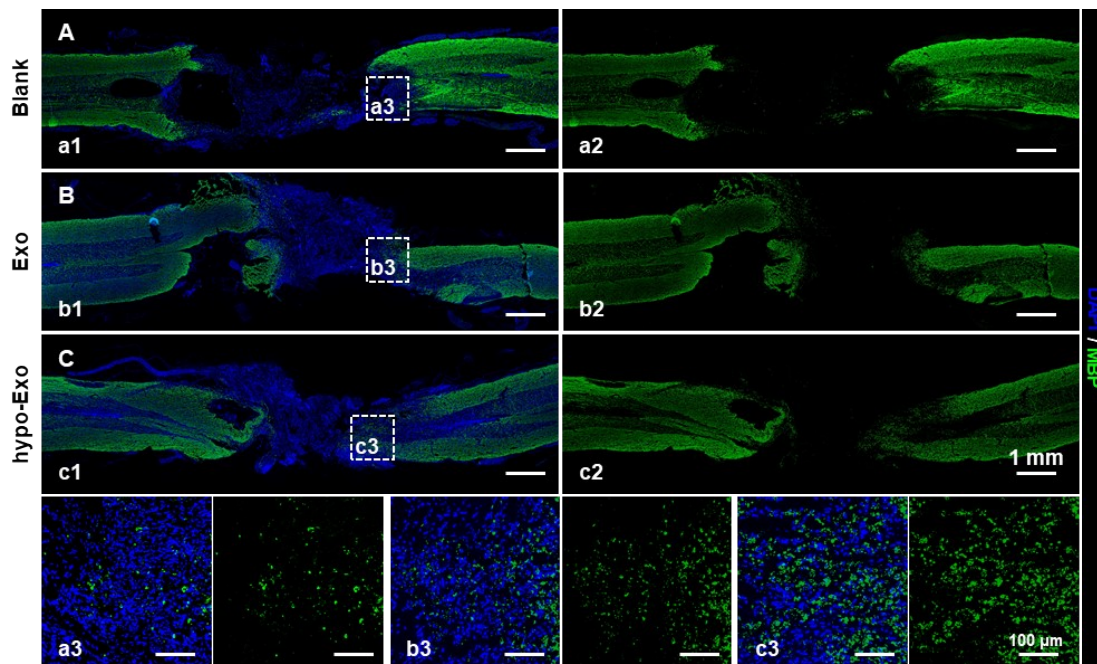
**Fig. S6**  $^1\text{H}$  NMR characterization of HA-Peptide. Red arrows indicated related characteristic peaks of free peptide and HA-Peptide.



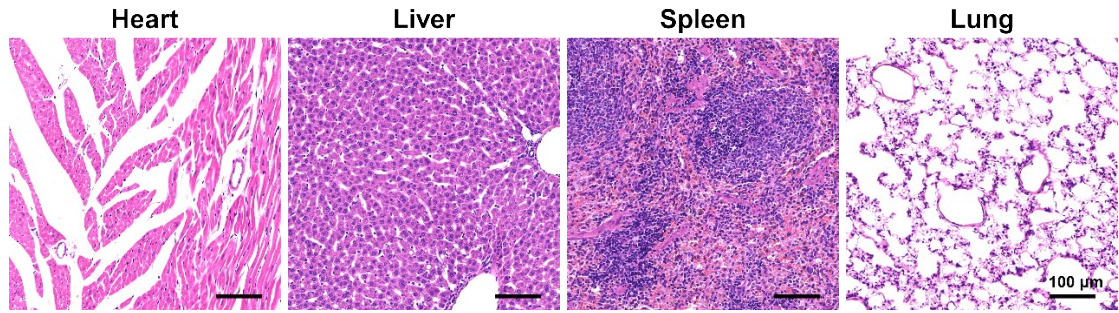
**Fig. S7** Three-dimensional distribution of hypo-Exo in HA hydrogel. The hydrogel loading CM-DiI (red) labeled hypo-Exo was scanned with LSCM. The pseudo color remolding demonstrated the exosome spatial distribution according to position Z.



**Fig. S8** Degradation of HA hydrogel in the culture medium.



**Fig. S9** Remyelination of injured spinal cord. The spinal immunofluorescence staining of myelin basic protein (MBP, green) in Blank (A), Exo (B), and hypo-Exo group (C) at 4-week post-surgery. The magnified views showed the detail of MBP distribution around the caudal stump (a3, b3, c3) boxed in (a1, b1, c1).



**Fig. S10** HE staining of heart, liver, spleen, and lung in hypo-Exo group at 4-week post-surgery.