

## Supporting Information

for

### Angiogenic Peptide Nanofibers improve wound healing in STZ-induced diabetic rats

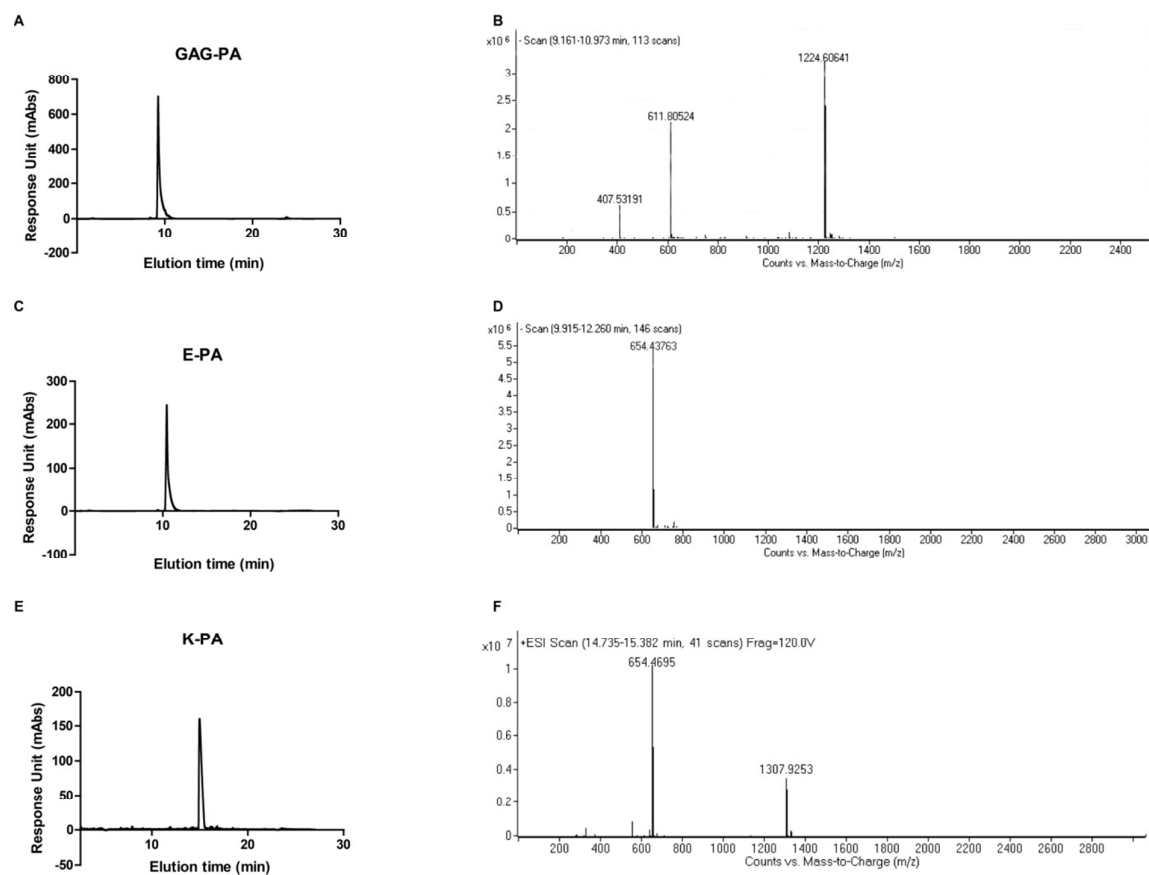
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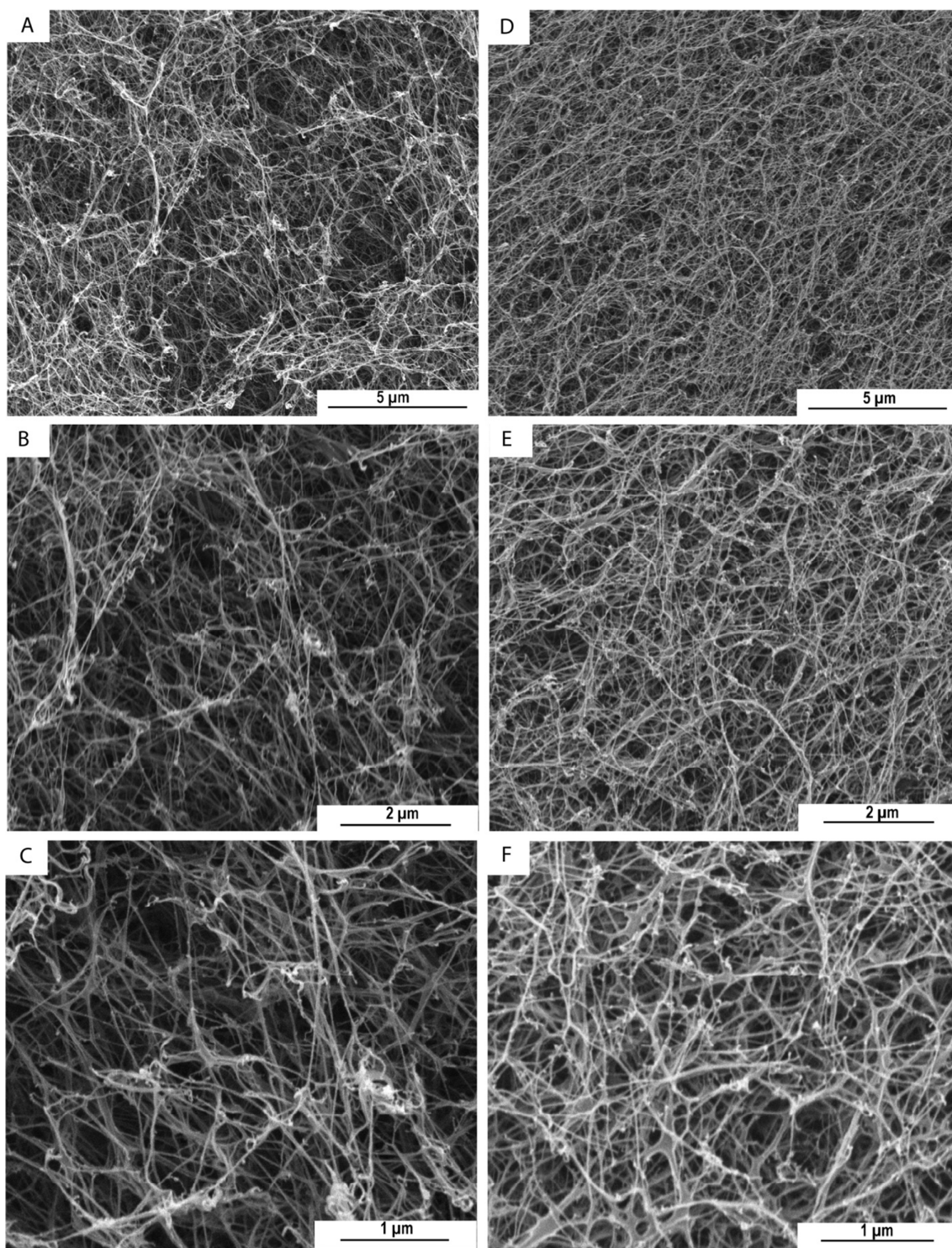
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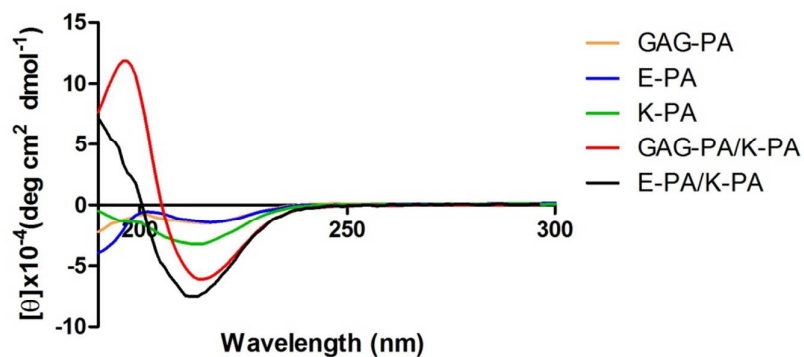
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**Figure S1.** Liquid Chromatography and mass spectroscopy of PA molecules used. HPLC chromatogram of purified GAG-PA (A), E-PA (C), K-PA (E) molecule at 220 nm. Mass spectra of peptides; for GAG-PA  $[M-H]^-$  (calculated) = 1224.80,  $[M-H]^-$  (observed) = 1224.60,  $[M/2-H]^-$  (calculated) = 611.80,  $[M/2-H]^-$  (observed) = 611.80,  $[M/3-H]^-$  (calculated) = 407.53,  $[M/3-H]^-$  (observed) = 407.53 (B), for E-PA  $[M-H]^-$  (calculated) = 655.82  $[M-H]^-$  (observed) = 654.43 (D), for K-PA  $[M+H]^+$  (calculated) = 653.89,  $[M+H]^+$  (observed) = 654.46,  $[2M+H]^+$  (calculated) = 1308.76,  $[2M+H]^+$  (observed) = 1307.92 (F).

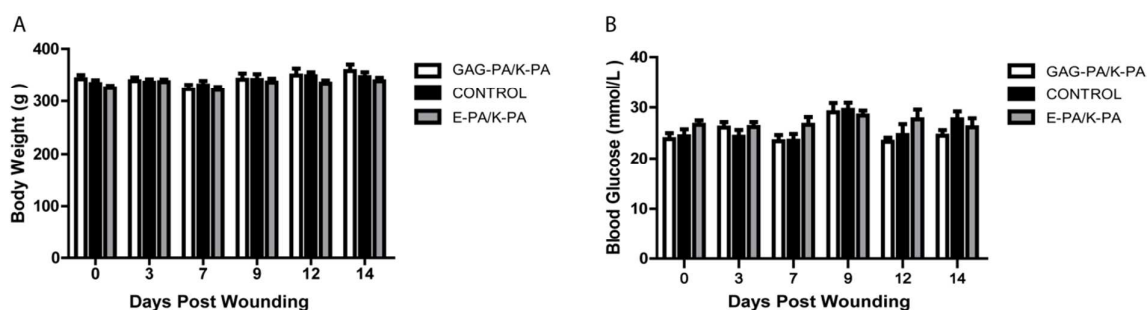


**Figure S2.** Characterization of peptide amphiphile nanofiber matrices GAG-PA/K-PA (A,B,C) and E-PA/K-PA (D,E,F) by using SEM, scale bars = 1  $\mu\text{m}$ .

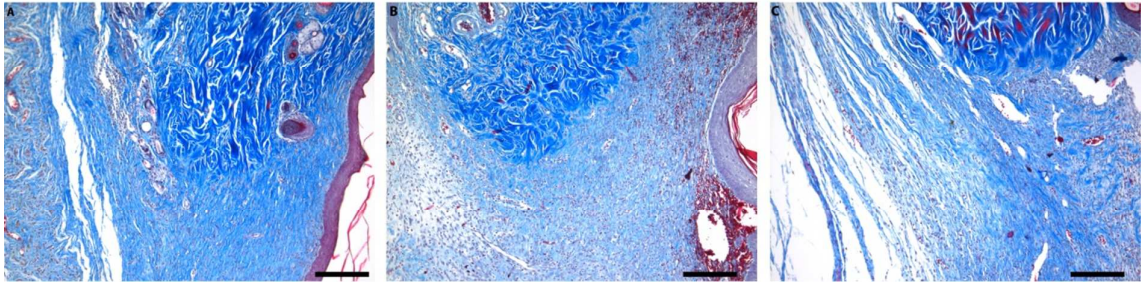


**Figure S3.** Characterization of secondary structure of peptide amphiphiles by circular dichroism (CD).

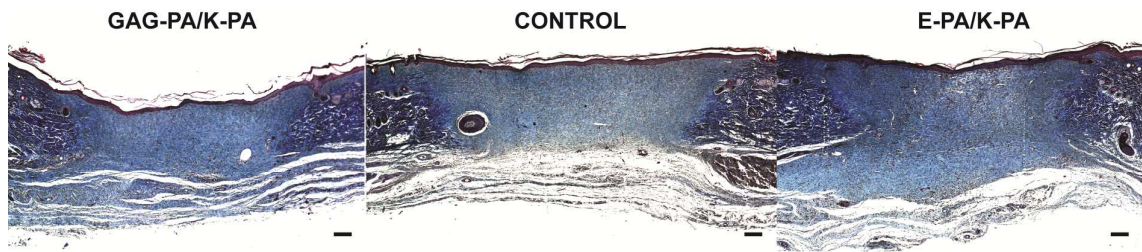
GAG-PA/K-PA and E-PA/K-PA showed nanofiber networks contain  $\beta$ -sheet secondary structure.



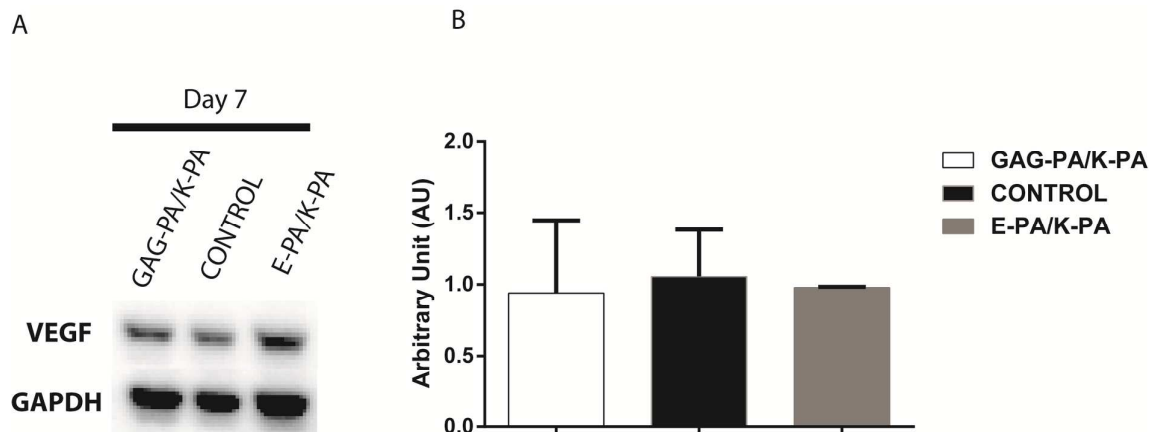
**Figure S4.** Changes in body weights (A) and blood glucose levels (B) of diabetic rats after cutaneous full-thickness wound creation (day 0). No significant difference was observed between groups at different time points ( $p < 0.05$ ).



**Figure S5.** Masson's Trichrome staining of GAG-PA/K-PA (A), control (B), E-PA/K-PA (C) at day 9, original magnification 100x, scale bars = 200  $\mu$ m. Blue color identifies collagen tissue, red color identifies keratin and muscle fibers.



**Figure S6.** Masson's trichrome staining of GAG-PA/K-PA, control, E-PA/K-PA at day 14, scale bars = 200  $\mu$ m.



**Figure S7.** The representative western blot analysis (A) and quantification (B) of VEGF expression. Rats were treated with bioactive (white), non-bioactive (black) and PBS control (gray) and protein

samples were collected on day 7. The density of the bands was evaluated by ImageJ and normalized to GAPDH signal. Data are presented as means  $\pm$ SEM, n = 3.