**Supporting Information** 

## Phosphorene hydrogel conduit as a neurotrophin reservoir for promoting peripheral nerve regeneration

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Fig. S1 Scanning electron micrographs of the BP+Nrg1 NGC.



Fig. S2 The statistical results of muscle fiber area, diameter and muscle weight ratio in soleus. (A) The quantification of muscle fiber area. (B) The quantification of muscle diameter. (C) The quantification of muscle weight ratio.



Fig. S3 The statistical results of muscle fiber area, diameter and muscle weight ratio in EDL. (A) The quantification of muscle fiber area. (B) The quantification of muscle diameter. (C) The quantification of muscle weight ratio.



Fig. S4 The quantification of the axon diameter and myelin sheath thickness. (A) The quantification of axon diameter. (B) The quantification of myelin sheath thickness.