RESULTS: Sensory TENGs "BABYSIT" Host Spinal Motor Neurons, 
Pro-Regenerative Schwann Cells, and Target Muscle in Rats

Sensory TENGs Preserved Host Nerve Defect in a Model of Chronic Axotomy in Rats

Regenerating Host Axons, Host Motor Neuron Pathway, and Target Muscle

RESULTS: Sensory/Motor TENGs Facilitate Functional Recovery Following Facial Nerve Segmental Defects in Swine (4cm)

Mixed Sensory/Motor TENGs Enhance Axonal Regeneration at Chronic Time Points in Pigs

Facial Nerve Defect at 16 Weeks Post Repair

CONCLUSIONS & FUTURE DIRECTIONS

- TENGs exploit our recently discovered mechanism of axon-reinforcing axon regeneration to serve as "bridging" nerve segments in chronic injury models. TENGs were shown in this study to promote host axonal elongation and Schwann cell infiltration across axon segments in chronic models. TENGs also improved functional outcomes in chronic injury models, further demonstrating the potential of TENGs as a regenerative therapy for peripheral nerve injuries.

- TENGs can be used in a variety of nerve repair models, including those involving spinal motor neuron injury. TENGs were shown to promote regenerative host Schwann cells and target muscle reinnervation in chronic injury models, indicating their potential for use in a wide range of clinical applications.

- Future studies will focus on optimizing TENG design and delivery methods to improve outcomes in chronic injury models. This includes further refinement of TENG materials and the development of new delivery methods to improve axonal regeneration and functional recovery.

- The results of this study suggest that TENGs may have the potential to revolutionize the treatment of peripheral nerve injuries, offering a novel approach to axon regeneration and functional recovery.