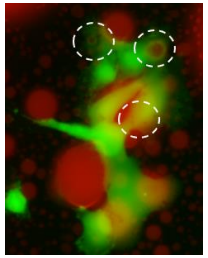
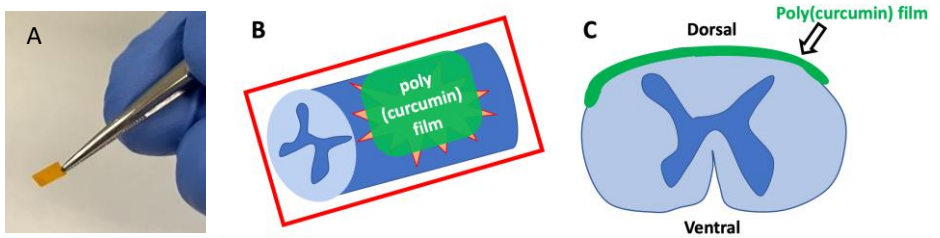
Tissue Scaffolding, Drug and Gene Delivery for Biomedical Applications

- Gene Delivery
- Lipid nanoparticle delivery of mRNA from electrospun fibers for peripheral nerve regeneration.
- Controlled release of LNPs from degradable fibers for sustained vaccine delivery.
- Drug Delivery
- Protein delivery from electrospun fibers for neural applications.
- Poly(pro-drug) polymers releasing curcumin for neural and vascular applications.
- Hydrogel Drug Delivery
- Intranasal drug delivery using elastin-like polypeptides.



Drug Delivery: Cells (green) taking up elastin-like polypeptides (ELP) (red) for drug delivery applications. Circles depict regions of cellular uptake.



Drug Delivery: A) Poly(pro-curcumin) film applied to the dorsal aspect (B and C, schematic) of the injured spinal cord for curcumin drug delivery.

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