

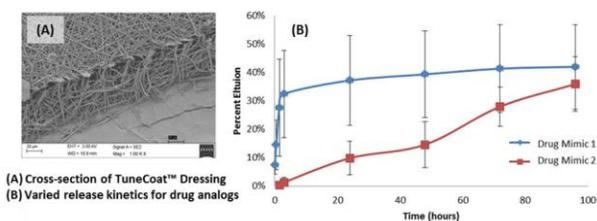
Luna Innovations is developing unique nanofiber-based wound dressings for controlled analgesic and therapeutic delivery.

“TuneCoat” | Advanced Dressings for Localized Topical Drug Delivery

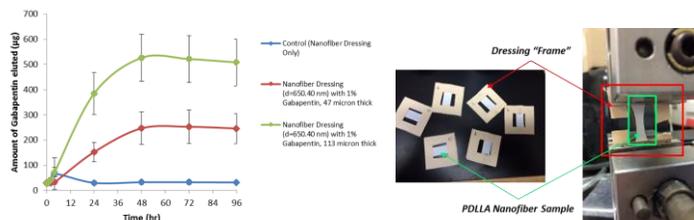
In order to address the need for localized pain relief in a wide-range of indications, Luna is developing a library of products known as “TuneCoat.” These nanofiber-based dressings are designed to provide controlled localized delivery of analgesics, particularly for burn pain and peripheral neuropathies. The dressings rely on the unique behavior of nanofibers to provide controllable drug release in an easy-to-use, breathable, flexible dressing. In our most advanced dressings for relief of neuropathic pain, nerve-targeting liposomes are utilized to preferentially delivery their pain relieving payload to the tissue of interest. Further, their fabrication process allows us to deliver multiple drugs simultaneously, and even to introduce broad-spectrum antimicrobials for a full wound care solution.



TuneCoat™

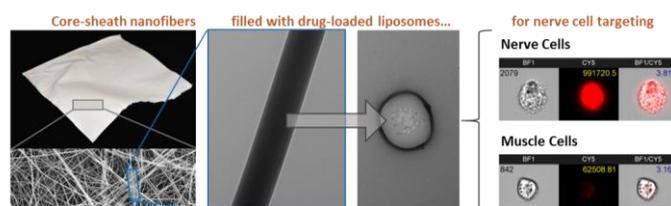


- Designed for use in localized treatment of burn pain.
- Demonstrated loading and release of lidocaine, fentanyl, and gabapentin.
- Dual-function silver-loaded nanofibers also provide broad spectrum antimicrobial behavior.
- Dressings are flexible, tough, and breathable.



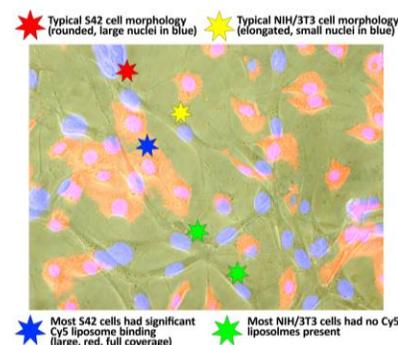
In vitro studies indicate control over gabapentin loading and release by modulating dressing thickness. Diameter also shown to alter release profile (not shown). Tensile testing shows the versatile, flexible behavior of the dressing.

TuneCoat-PN™



- Advanced version of the base dressing, TuneCoat-PN carries nerve-targeting liposomes.
- Demonstrated loading and release of liposomal drug delivery vehicle.
- Preferential targeting of nerve cells (S42 Schwann) shown *in vitro*.
- Dressings currently produced with gabapentin and venlafaxine for treatment of neuropathic pain.

Fluorescently-labeled liposomal drug delivery vehicles have been shown to preferentially target and infiltrate nerve cells (S42) when they are in co-culture with muscle fibroblasts (NIH-3T3).



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