Rx Bandz MiniJect Delivers Advanced Supramolecular Hydrogel with University of Notre Dame Lab

MiniJect delivers high viscosity formulations.. Expands range of injectable therapies, especially in regenerative medicine and cell-based therapies

DENVILLE, NJ, UNITED STATES, August 4, 2026 /EINPresswire.com/ -- The University of Notre Dame's Webber Lab and Rx Bandz recently demonstrated that Rx Bandz's MiniJect® auto-injector was able to deliver advanced supramolecular hydrogels at practical injection speeds while maintaining acceptable injection forces. These tests highlight Rx Bandz's ability to deliver formulations with high viscosities that are difficult for other auto-injectors to administer.

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>
> *Prof. Matthew Webber*

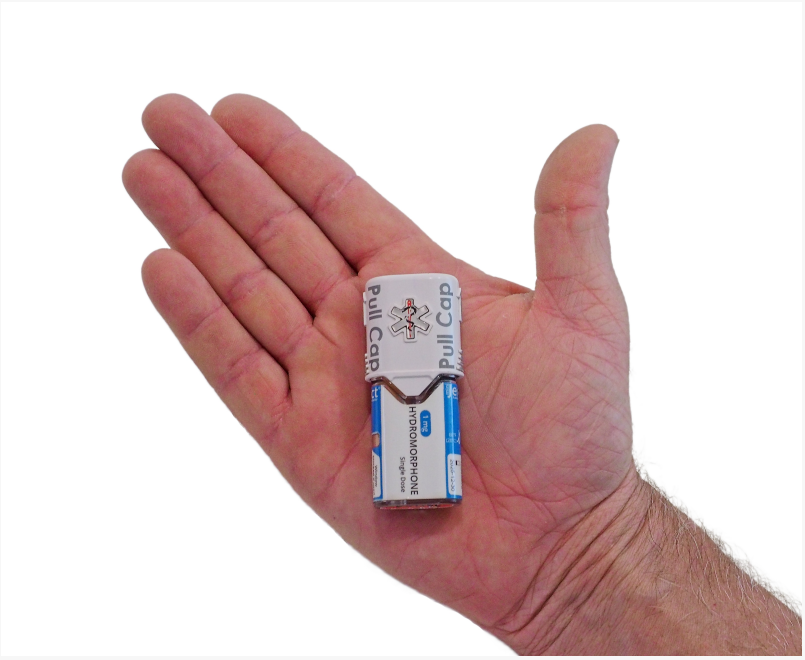
The Notre Dame-Rx Bandz collaboration focused on supramolecular hydrogels that are advanced soft, water-rich biomaterials that can carry therapeutic cells or drugs. Hydrogels are being developed for a range of regenerative medicine and drug delivery applications. Unlike conventional hydrogels, these dynamic materials are designed to temporarily become less viscous during injection and rapidly recover their structure afterward. While this behavior makes them attractive for minimally invasive therapies, it can also present challenges for conventional auto-injector systems.

For those working with viscous, shear-thinning, or self-healing biomaterials, these properties can prove challenging to their delivery and become a limiting factor in translation. Early collaboration and auto-injector compatibility help reduce risk and improve consistency of delivery, toward improved therapeutic compliance with reduced patient fatigue.

This collaboration between the Notre Dame Webber Lab and Rx Bandz demonstrates how innovations in delivery devices and biomaterials design can productively expand the range of injectable therapies and accelerate the translation of new treatments, especially in regenerative medicine and cell-based therapies.

Rx Bandz continues to evaluate its platform with advanced formulations, including high-viscosity injectables and other non-Newtonian materials, as part of its broader effort to support next-generation drug-device combination products.

Prof. Matthew Webber, Keating-Crawford Collegiate Professor of Engineering, professor of chemical & biomolecular engineering, and acting director of the Berthiaume Institute for Precision Health at Notre Dame, leads the laboratory that pioneered the supramolecular hydrogel. He said, “Hydrogel biomaterials offer exciting new opportunities for minimally invasive therapies, but realizing their full potential also requires innovations in the devices used to deliver them.



Rx Bandz MiniJect is compact, easy-to-use, rugged and is designed to deliver even the most challenging therapeutics.

“Our collaboration with Rx Bandz demonstrated that their auto-injector technology can effectively administer a dynamic supramolecular hydrogel that might be challenging for many conventional injector systems. We're pleased to work together to help advance technologies that could broaden patient access to next-generation injectable therapies."

Stephen Harhen, Chief Technology Officer of Rx Bandz, said, “Many emerging injectable therapies extend beyond traditional low-viscosity formulations and include complex, dynamic materials that can be difficult to deliver reliably with conventional spring-driven systems. These results demonstrate the value of MiniJect’s hydraulic platform for delivering challenging formulations and reinforce its potential to help make advanced therapies practical outside specialized clinical settings.”

About the Webber Lab: The Webber Lab is an interdisciplinary research group focused on engineering molecules and molecular-scale interactions to tackle pressing challenges in healthcare. Grounded in the principles of supramolecular design, the lab harnesses predictable, tunable, and high-affinity interactions to create modular platforms for next-generation therapeutics. These systems enable precise control over emergent properties to tailor materials, devices, and constructs to meet specific application needs. Its research thrives on collaboration—within the University of Notre Dame and across the regional and global academic landscape. The Lab also welcomes partnerships with industry to help translate our innovations into real-world solutions.

Learn more about the Webber Lab at https://www.webberlab.com/

About Rx Bandz: Rx Bandz is a privately held, multi-asset medical device and formulation development company developing a platform of patient-centric auto-injectors and proprietary drug formulations. From its laboratory in Denville, New Jersey, the company is advancing a new generation of compact, portable auto-injectors designed to improve the delivery of injectable medications for military personnel, emergency medical services (EMS), and patients at home and in everyday settings.

Its lead platform, MiniJect®, is being developed to deliver critical emergency medications, including epinephrine for anaphylaxis, ketamine and hydromorphone for pain management, with rapid deployment, intuitive operation, and enhanced portability. The platform is designed to expand access to life-saving therapies, such as tranexamic acid for hemorrhages and antibiotics, across prehospital, battlefield, and home environments.
Beyond MiniJect®, Rx Bandz is developing a versatile family of auto-injectors capable of delivering 1 mL to 5 mL injectable therapies across a broad range of medication viscosities. By integrating innovative device engineering with proprietary drug formulations, the company aims to make injectable treatments simpler, more reliable, and accessible by anyone, anytime, anywhere.
Learn more at www.rxbandz.com

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