



PRODUCTS

NanoMedTrix (NMTx) provides novel multi-modal nanotechnology platform – Mesoporous Silica Nanoparticles (MSNs) for targeted contrast agent options for use in regenerative technology and targeted radiology in medical imaging (MRI, CT and ultrasound) and for precisely targeted therapeutics. Multi-modal properties mean that a single dose will be effective across two or more **diagnostic** scanning types, increasing efficiency where more than one type of scan is required. They are multi-scale, working at the cellular, tissue and organ level. **Therapeutically**, the same biorecognition elements on the MSNs are employed to specifically bind MSNs containing a pharmaceutical payload directly to the target cells. In this way, MSNs can deliver higher concentrations to the target without collateral damage to normal/surrounding cells.

MSN Particles:

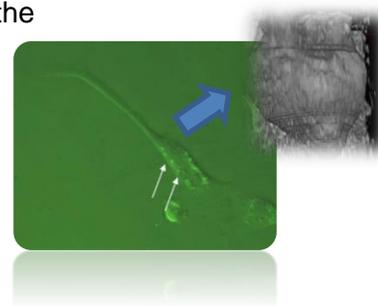
- ❖ 100-200 nm in diameter, 5 nm pores
- ❖ Loaded with drugs or fluorophores for controlled release
- ❖ Capped with a metal/metal oxide nanoparticle
- ❖ Functionalized with various molecules to specifically bind MSNs only to target cells

WHAT NMTx DOES

NanoMedTrix develops novel multi-modal, targeted contrast agents MSNs for use across a range of disciplines, including regenerative technology and targeted radiology in medical imaging. Contrast agents are used to enhance the visibility of structures or fluids in the body during scans, such as MRI, CT and ultrasound. While there are many contrast agents available on the market, NMTx's are unique for four important reasons:

- ❖ They are multi-modal, meaning that a single dose will be effective across two or more scanning types, increasing efficiency where more than one type of scan is required;
- ❖ They are multi-scale, working at the cellular, tissue and organ level;
- ❖ They are cell-specific and therefore capable of flagging a particular pathology or tissue type, as opposed to other contrast agents that are non-specific and act throughout the whole body. This capability means that NMTx's contrast agents have the potential to revolutionize disease detection through non-invasive diagnostic procedures.
- ❖ They retain their imaging opaque quality once injected producing the ability to continuously monitor for the presence of the targeted cells without subsequent injections. Although MSNs are inherently opaque themselves, once infused with an imaging agent, MSNs provide the capability of early detection of disease at the cellular/tissue/organ levels.

- ❖ They have the potential for therapeutic interventions, by acting as a means of cell-specific, targeted drug delivery. This



- provider MSN users with the ability to increase therapeutic payload while simultaneously decreasing the negative impact on surrounding tissue.
- ❖ MSNs are agnostic to biochemical payload type. Therefore, whether MSNs are impregnated with an imaging agent or an anti-mitotic drug or both, MSNs will deliver these agents to a specific tissue.

In short, NMTx's MSNs are a superior and effective, targeted, local delivery vehicle for both diagnostic and therapeutic interventions.

COMMERCIAL VIABILITY

NMTx provides the invaluable set of multi-scale tools – MSNs, for research into early detection and treatment of diseases, with the goal of achieving more effective medical care through early, accurate and rapid diagnosis followed by successful therapeutic interventions.

Company's history

NanoMedTrix was formed in August 2012 as a spinoff derived from decades of innovative biomedical research in nanomaterial and regenerative medicine. NMTx was founded to commercialize these scientific advances to

deploy nanoparticles product to the biomedical community. Since inception, the company has received a number of grant and awards from the University of Iowa, the NIH and NSF. NanoMedTrix received numerous awards from the State of Iowa's Economic Development and Federal (NSF and NIH) institutions. NMTx was developed as a spinoff of decades of innovative biomedical research in nano-material and regenerative medicine.

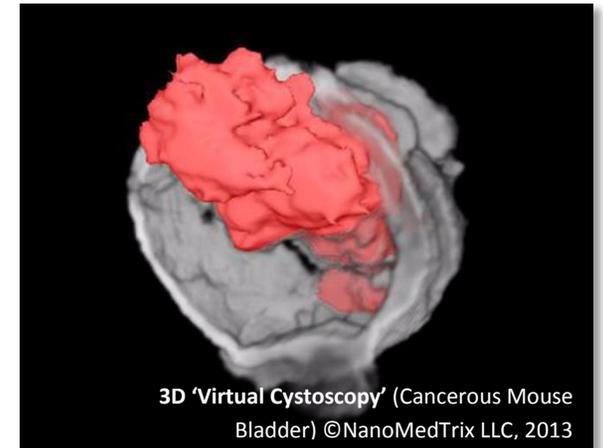
The Management Team

Joe Assouline, PhD. Is the founding member and Chief Science Officer of NanoMedTrix, LLC. Dr. Assouline has held various academic positions in Medicine and Engineering at the University of Iowa. Dr. Assouline's main research focus has been to develop novel target molecules and bioactive markers. Starting during his tenure at the National Institutes of Health (Bethesda, MD), he began his quest for a reliable marker technology which will serve simultaneously as a diagnostic tool and therapeutic alternative. This led to a number of innovation designs which later culminated in the development of a series of nanotechnology, multifunctional particles with applications in biotechnology and medicine.

Sean Sweeney, PhD. Senior Engineering and Manufacturing Officer. Sean has received strong training in all research interests of NanoMedTrix. He has direct, practical experience in various types of nanomaterials and has applied his background to multiple biomedical applications. He has participated

and managed teams of scientists in the development and experimental designs for labeling and imaging contrast enhancement as well as a broad spectrum of biomedical engineering. As Senior Engineering Manager in our startup firm he oversee the production, quality control/characterization, packaging, and distribution of our materials for commercial or research applications.

Advanced nanoparticles for superior imaging diagnostics and improved targeted drug delivery



CONTACT US!

NanoMedTrix, LLC

2500 Crosspark Road Suite E141
Coralville, IA 52241

Phone (319) 335-4676

Alternate phone (319) 541-2036

Email: joeassouline@nanomedtrix.com
or nmtx.corporate@nanomedtrix.com

Visit us on the web at

www.nanomedtrix.com