

THE NANOTECHNOLOGY CENTER

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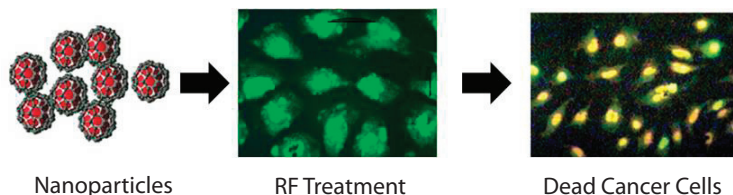


EXCELLENCE IN RESEARCH & DEVELOPMENT



NANOMEDICINE

The Nanotechnology Center at the University of Arkansas at Little Rock (NCUALR) was established in 2006 to foster nanoscience and innovation, to serve the scientific community and industry through research and outreach, and to accelerate technological innovations into practical applications for society.



NCUALR's current multi-disciplinary projects include potentially transformational research in the use of non-invasive nanoparticles that are capable of destroying cancer cells upon exposure to low-amplitude radio frequency emissions or as delivery agents.

Scientists at NCUALR have also developed innovative nanomaterials that may be used to create surface coatings for medical implants and biodegradable, biocompatible scaffolds for healing bone defects.



Applications

TARGETING AND DESTROYING CANCER CELLS

Researchers at the NCUALR have developed carbon-based nanomaterials that travel through various tissues and membranes and spread through the body—not just through blood vessels but also through the lymphatic system. These novel nanostructural materials could be used to track and kill individual cancer cells in the human circulatory system through a variety of innovative methods.

TISSUE ENGINEERING

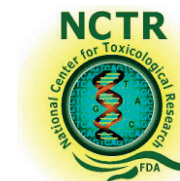
Biocompatible nanocomposite thin-film structures can be atomically bound to medical devices to enhance their performance and longevity. These surface coatings could be applied to dental implants, pacemakers, catheters, etc. The advanced bone-grafting scaffolds are comprised of multiple, non-uniform nanomaterials, and are assembled in multipart, three-dimensional structures. This technology could be extended to the regeneration of various other tissues—such as skin and arteries.

Key Benefits

- ✓ Minimize damage to healthy tissue
- ✓ Increase the effectiveness of anti-cancer drugs
- ✓ Eradicate cancer cells prior to the formation of tumors
- ✓ Promote swift integration of a wide variety of medical implants
- ✓ Reduce the probability of infection
- ✓ Speed the healing process



PARTNERS & COLLABORATORS



Arkansas Department of Health



U.S. Army Medical Research Materiel Command

NCUALR has 4 issued patents, 27 patent applications, & 3 spin-off companies. We welcome new partners from business and industry!

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