Nano-Technology May Kill Cancer Cells

CHELMSFORD, Mass., February 19, 2004. Congressman Martin Meehan (D-MA) yesterday unveiled an innovative technology designed to give late-term breast and prostate cancer patients a second chance at recovery, without the debilitating side effects of today's chemo and radiation therapies. The Targeted Nano-Therapeutics (TNT) system is the first of its kind in the world.

The core technology of the TNT system was developed by Chelmsford-based Triton BioSystems in partnership with the U.S. Army Research Lab, Weapons and Materials Directorate. The Army first developed this nano-technology to help improve battlefield repairs of military armor, but Triton BioSystems saw an opportunity to use it to kill cancer tumors. The U.S. Army's Walter Reed Army Institute of Research will fund the TNT research for use in Army medical facilities and hospitals worldwide.

"As a senior member of the House Armed Services Committee, I am happy to foster the development of such an innovative, life-saving technology made possible by the US Army," said Rep. Meehan. "And I am especially proud of the cutting-edge talents of the private-public research team in the Merrimack Valley, who will be responsible for ensuring that the promise of this technology becomes a reality."

The TNT system attacks cancer in three steps. First, the patient receives a simple infusion containing trillions of bioprobes, each of which is a nano-scale magnetic sphere bound to an antibody. Once in the bloodstream, the bioprobes seek out and attach to cancer cells. Finally, the doctor switches on a magnetic field in the region of the cancer, which causes the bioprobes to heat up, killing the cancer cells within minutes.

A team of Merrimack Valley institutions including the University of Massachusetts (Lowell) and Triton BioSystems are working to prepare the TNT system for human clinical trials, and expect to submit an application to the FDA in 2005.


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