



**Multimeric Biotherapeutics, Inc.**  
**("MultimericBio")**  
***"Unlocking the potential of the TNF SuperFamily Ligands"***

**Nanotechnology joined with immunotherapy succeeds in treating melanoma tumors in mice**

Oct. 14, 2009, San Diego, CA – Chemically produced polymers can be combined with powerful immune stimulants to control melanoma tumors in mice, according to a team of researchers from San Diego and the Massachusetts Institute of Technology (MIT). The findings could lead to improved ways to harness the immune system to control cancer. The new treatment, reported in the journal PLoS ONE, uses nanoparticles to deliver the gene for a specially engineered form of CD40 ligand (CD40L), a natural protein that acts as a master switch to activate the immune system. With the addition of bacterial products called Toll-Like Receptor (TLR) activators, the immune-mediated antitumor effects were even stronger and permanently cured many of the mice.

The new form of CD40L is called UltraCD40L. It was developed by Richard Kornbluth, previously an Associate Professor at the University of California San Diego (UCSD) and now Chief Scientific Officer at Multimeric Biotherapeutics, Inc. The lead author of the study is Geoffrey Stone, formerly at UCSD and now an Assistant Professor at the University of Miami.

The new nanoparticle technology was developed by Gregory Zugates, Robert Langer, and Daniel Anderson from the David H. Koch Institute for Integrative Cancer Research at MIT. It uses new biodegradable polymers known as poly(beta-amino esters) that form nanoparticles when mixed together with DNA. When these polymer-DNA nanoparticles were injected directly into the mouse tumors along with the TLR activators, the tumors grew slower and eventually disappeared in 40% of the mice.

"This research is still in the early stages, but we believe that we can eventually learn how to apply this approach to human cancers. One of the new ideas is that the polymers, in addition to helping to deliver DNA genes, can themselves help to activate the immune system to fight cancer," Kornbluth said.

Other UCSD authors on the paper were Suzanne Barzee, Victoria Snarsky, and Brian Tran. The research was funded by the National Institutes of Health, the Mesothelioma Applied Research Foundation, and the VA San Diego Healthcare System.

**Online reference:** <http://dx.plos.org/10.1371/journal.pone.0007334>

For further details, visit the company's website: [www.multimericbio.com](http://www.multimericbio.com)

**About Multimeric Biotherapeutics, Inc.**

Multimeric Biotherapeutics, Inc. is a biotech company focused on applying CD40L and other TNF SuperFamily ligands for the prevention and treatment of disease. It uses its novel technology to create next-generation vaccines and tumor immunotherapies. More information is available at [www.multimericbio.com](http://www.multimericbio.com). Contact us at [info@multimericbio.com](mailto:info@multimericbio.com)

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