



THE UNIVERSITY of TEXAS

HEALTH SCIENCE CENTER AT HOUSTON

Office of Technology Management

TARGETING TUMORS BY PATTERN RECOGNITION: A PARADIGM SHIFT IN TARGETED THERAPEUTICS

Market: The American Cancer Society estimates that more than 500,000 people will die from cancer in the U.S. in 2007. Many cancer deaths, specifically from cancers of the colon, breast, rectum, and uterine cervix cancers, could be significantly reduced with earlier detection and improved therapy. Cancer treatment of the 15 most common cancers accounted for an estimated \$72.1 billion of medical expenditures in the US in 2004. World wide, IMS Health reported that drug companies exceeded \$34 billion in sales of cancer drugs in 2006.

Competitors and Current Problems: The holy grail of cancer treatment has been the search for unique molecular markers on cancer cell surfaces to enable the differential delivery of drugs to tumors. The most significant limitation of current treatment regimes is the inability to deliver large doses of chemotherapeutic agents to tumors while sparing non-tumor tissue. There has been research in delivery systems for ligand binding that contains multiple types of ligands. However, none of the research in these experiments utilizes the multiple types of targeting ligands to target a single type of cell bearing multiple types of receptors in order to enhance binding and uptake of the delivery vehicle. A huge unmet need for novel therapeutic agents and delivery mechanisms still exists.

The Technology: Researchers at the University of Texas Health Science Center at Houston (UTHSC-H) and Georgia Institute of Technology have developed methods and compositions for the simultaneous targeting of multiple types of receptors on tumor cells with drug delivery vehicles. The technology increases specificity for tumor cells by recognizing the receptor patterns on the tumor cells. In addition, the inventors have discovered that cells targeted by the multiple types of targeting ligands take up more drug than cells targeted by either type of individual targeting ligand. This technology has possible applications to pharmaceutical delivery formulation developments with possible use in the clinic.

NON-CONFIDENTIAL TECHNOLOGY DESCRIPTION

The preceding is intended to be a non-confidential summary of a novel technology created at the University of Texas Health Science center at Houston (UTHSCH), for which the University has obtained patent protection.

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Inventors: Annapragada et al.

Patent Status: Pending

License Available: world-wide; exclusive or non-exclusive

To obtain further information about this technology, please contact:
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