

Ligand-Directed Targeting and Molecular Imaging Based on In Vivo Phage Display

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Background

According to the National Cancer Institute, 39.6 percent of men and women will be diagnosed with cancer at some point during their lifetimes. National expenditures for cancer care, in the United States alone, totaled nearly \$125 billion in 2010 and are predicted to reach \$156 billion in 2020. As such, research on treatment, detection and therapies for this disease is of vital importance. One line of research studies how to select human antibodies against molecular targets that have been found on the surfaces of melanoma and cancer cells, derived from breast, lung and prostate. The concept of targeted cancer therapy is predicated on the assumption that each tumor has unique and sustained genetic abnormalities; targeting these distinct features can be accomplished through identification of certain molecular markers, or targets.

Technology Breakthrough

A team with decades of extensive expertise in the field of cancer research from Los Alamos National Laboratories and University of New Mexico, have developed broad panels of human antibodies against potential cancer targets. These researchers have developed a pipeline for the identification of tumor targets binding to motifs on different tumor classes. Researchers will exploit the target sequences to develop suitable antibody selection targets, and use these targets to generate numerous human antibodies from a large antibody library. With hundreds, or possibly thousands, of target specific antibodies available, it will allow researchers to directly identify high affinity antibodies suitable for research use. By selecting antibodies with tumor localizing activity, the potential to deliver therapeutic or diagnostic methods to treat cancer grows.

The group of broad panels of human antibodies against potential cancer targets will greatly improve the ability to provide reagents of quality for the development of diagnostic tools, research reagents and therapeutic leads. This pipeline, once established, will be applicable to any protein target and will address many aspects of antibody creation, including target generation, antibody selection and sequencing, antibody characterization and *in vivo* antibody testing.

Key Advantages

- *Specific antibodies, like the ones mentioned, are invaluable*
- *Will provide functional, well characterized human antibodies against putative cancer targets*

Intellectual Property

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