

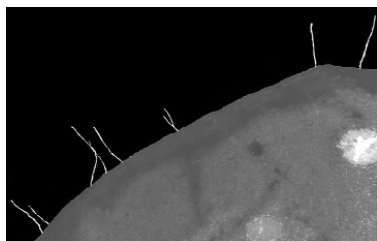
Greenhouse Fund Recipient

PHENO^TECH INCORPORATED

Phenotech, Inc.

Current technologies used in blood collection facilities, blood banks, and transfusion service laboratories are extraordinarily labor intensive, prone to human error, and an order of magnitude more expensive per test than those in other clinical laboratories. Coupled with a growing shortage of skilled medical technologists, dwindling supplies of human plasma-derived phenotyping reagents, and an inherent difficulty in fully automating 1950's-based agglutination methodologies, the ability to perform the hundreds of millions of pre-transfusion tests per year in a rapid, accurate, and cost-effective manner has become a significant challenge.

Phenotech, Inc. is employing novel molecular technology to develop a new class of renewable, inexpensive, high-quality blood bank testing reagents that will function in a rapid, high-throughput, automatable assay system. At the core of the technology are red blood cell antigen-specific monoclonal antibodies displayed on the surface of bacteriophage particles. Phenotech is exploiting the naturally-occurring presence of unique DNA sequences within the particles to develop an assay system in which the phenotype of a red cell is determined by assaying the genotype of the detecting reagent. Such a strategy will offer extraordinary sensitivity and specificity, will require minute amounts of testing materials and reagents, will be easily adapted to automation, and will be amenable to multiplexing strategies offering the possibility of simultaneous antigen profiling of a red cell sample in a single reaction vessel.



Transmission electron micrographic images of anti-Rh-expressing M13 bacteriophage particles (white filaments) bound to the surface of an Rh-positive red blood cell. Binding occurs at the tips of the 500 nm-long phage where the recombinant antibodies are located. Antibodies expressed on bacteriophage result from the use of phage display technology, a new method for inexpensively producing self-replicating monoclonal antibodies for diagnostic and therapeutic applications. Within each particle is a unique piece of DNA, the detection of which can be used to rapidly phenotype the cell.

Management

Guy Maestre, President, CEO and Chairman of the Board, Prior to joining PhenoTech, Mr. Maestre served as President and CEO of Novactyl, a biotech company developing various anti-infective products, where he led the company in raising capital, negotiating worldwide licensing agreements and completing Phase IIa development for the lead product indication. Before Novactyl, Mr. Maestre worked at Wyeth where he held positions of increasing responsibilities including the offices of President, Sodilac – France, Vice President, International New Product Marketing and Vice President, Strategic Planning. Prior to Wyeth, Mr. Maestre held various positions at G.D. Searle & Co in the USA and France. Mr. Maestre received his MBA from Ecole Supérieure des Sciences Economiques et Commerciales (ESSEC), in Cergy, France. He graduated from the Institut de Pharmacie Industrielle de Montpellier (IPIM), and received his pharmacist degree from the Université de Pharmacie in Montpellier, France.

Don L. Siegel, Ph.D., M.D., Founder, Dr. Siegel graduated from Brown University in 1977 where he received an honors degree in Biophysics. He subsequently received a Ph.D. in Biophysics from Harvard University in 1983 and the M.D. degree from the University of Pennsylvania School of Medicine in 1987. He continued on at the University of Pennsylvania completing a residency in Clinical Pathology in 1990 and Fellowship in Blood Banking/Transfusion Medicine in 1991. He is currently Associate Professor of Pathology and Laboratory Medicine at the University of Pennsylvania and Director of the Blood Bank/Transfusion Medicine section for the University of Pennsylvania Medical Center. Dr. Siegel's research laboratory has been interested in the molecular characterization of the human humoral immune response in order to develop specific therapeutic agents that down-regulate immune responses in the settings of immune hemolytic anemias and thrombocytopenias, clotting disorders, and transfusion reactions. To approach these problems experimentally, Dr. Siegel has developed and patented several phage display technologies useful for the isolation of human auto- and allo-antibodies with novel diagnostic and therapeutic properties.

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