



IMMUNOTOPE, INC.



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Contact:
Ramila Philip PhD

Location:
Doylestown PA

Email:
rphilip@immunotope.com

Tel:
215.489.4955

Website:
<http://www.immunotope.com>



Company Profile

Industry Sector: Biotechnology: vaccine discovery and development

Company Overview: Utilizing a unique Immunoproteomics approach, we identify clinically most relevant antigens, targeted directly to activate the T cell immune response to develop highly active, yet safe, vaccines and then perform initial development. Successful preclinical milestones have been achieved with dengue vaccine formulation and we aim to initiate human clinical trials by end of year 2016. Our product portfolio includes Dengue, Influenza, HBV, HCV, and HTLV-1 viral vaccines and ovarian, breast, lung, pancreatic and colon cancers therapeutic vaccines.

The technology was developed by Dr. Ramila Philip, CSO at Immunotope.

Target Market(s): Annual dengue vaccine sales worldwide are projected to reach \$2.6 billion.

- Large and medium size players in pharmaceutical and biotech industry, active or looking to enter the infectious disease market.
- Global dengue vaccine markets including government and non-government sectors primarily in the endemic areas
- Regional and local markets with no current vaccine production capabilities seeking to take control of their national demand and supply.

Dengue vaccine is important for US military for protection of troops deployed in endemic areas.



Key Value Drivers

Technology*: Immunotope has developed Immunoproteomics technology to identify clinically relevant antigens that activates T cell mediated immune response and formulate them in a nanoparticle delivery system for effective vaccine response. The technology is used to develop therapeutic and prophylactic vaccines against infectious diseases including dengue, influenza, HBV and other chronic viral diseases and cancer.

Competitive Advantage: Immunotope dengue vaccine has several advantages over the traditional antibody producing vaccines. Our dengue vaccine covers all 4 serotypes, able to eliminate virus infected cells, fully synthetic, easy to formulate, vaccine is stable in powder form at room temperature, and most importantly, Immunotope vaccine formulation is simple, low investment manufacturing process, reducing manufacturing time, steps and costs. This vaccine can be administered to both naïve/uninfected as well as dengue virus infected individuals and potentially capable of minimizing dengue hemorrhagic fever and dengue shock syndrome mediated by the presence of antibody to heterologous serotype.

Plan & Strategy: Actively seeking strategic partners for conducting clinical studies either in US or in Asia, manufacturing and marketing dengue virus globally. We plan to support the development and commercialization of safe and effective novel vaccines with the most time and cost-effective manufacturing process to realize significant commercial and competitive advantages.

*Technology funded by the NIH grant (R44 AI062177) and being commercialized under the NIH-CAP



Management

Leadership:

Ramila Philip, PhD. President and CSO. 25 years of academic and industrial experience in the field of immunology, immunoproteomics technology and therapeutic and prophylactic vaccine development.

Mohan Philip, PhD, MBA. COO. 25 years of scientific and business development experience, small business management and licensing and corporate acquisition experience.

Scientific Advisory Board:

Kim Lyerly, MD, Duke University School of Medicine. Internationally known cancer immunotherapy & translational medicine expert.

Dr. Jeffery Weber, MD, NYU.

Internationally known melanoma immunotherapy expert.

Timothy Block, PhD, Baruch Blumberg Institute.

Internationally known virologist, specialized in hepatitis B and C drug development.



Product Pipeline

	Discovery	Pre clinical	Phase I
Dengue vaccine	✓	✓	
Influenza vaccine	✓	✓	
HBV therapeutic vaccine	✓		
Ovarian/Breast Cancer	✓	✓	
Lung Cancer	✓		

- Cancer indication – 3 issued US patents
- 8 Patent applications pending – multiple countries