

## 6<sup>th</sup> Euro Global Summit and Expo on **Vaccines & Vaccination**

August 17-19, 2015 Birmingham, UK

### Designing tumor immunotherapy amidst tumor heterogeneity

**Periasamy Selvaraj**  
Emory University, USA

Cancer is a highly heterogeneous disease and mutations that occur in genes vary patient to patient. Further, recent studies using deep sequencing technology reveal that tumor tissue exhibit high degree of intratumoral heterogeneity harboring multiple clonal populations with the tumor. Therefore, the use of established cell lines as therapeutic vaccines may not represent all the clonal populations and will not be efficacious. Our laboratory has pioneered the development of a therapeutic cancer vaccine design that uses tumor membrane vesicles (TMVs) prepared from tumor tissue and a novel protein transfer technology to adjuvantate them. Using this approach it is feasible to develop cancer vaccines from surgically removed tumor tissues which incorporates all the antigenic variations found in the tissue. In this technology, immunostimulatory molecules are attached to a glycolipid and then tethered to tumor membranes by a short-incubation, thus eliminating the need for gene transfer or live cells to develop cancer vaccines. The immunostimulatory molecules incorporated onto tumor membranes serve as adjuvants to boost antitumor immunity against tumor-associated antigens expressed on cancer cell membranes. Experiments using mouse models of cancers have shown that membrane-based cancer vaccines prepared by protein transfer technology can protect mice from live tumor cell challenge suggesting that membrane-based cancer vaccines induce protective antitumor immunity. This personalized therapeutic vaccine approach has the potential to treat cancers where the target antigen is yet to be identified.

#### Biography

Periasamy Selvaraj received his Ph.D. in India and did his postdoctoral in Immunology at Dana Farber Cancer Institute, Harvard Medical School, Boston. Currently, Dr. Selvaraj is a Professor of Pathology in the School of Medicine of the Emory University at Atlanta, GA. His laboratory focuses on developing cancer vaccines using novel protein transfer approaches. He has published more than 90 research papers in national and international journals. Dr. Selvaraj also serves as Chief Scientific Officer and Co-founder of Metacclipse Therapeutics Corporation, a biotech company focusing on developing personalized immunotherapy for metastatic cancer.

[pselvar@emory.edu](mailto:pselvar@emory.edu)

#### Notes: