

# 8<sup>th</sup> Molecular Immunology & Immunogenetics Congress

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### **A backdoor into the castle: The clinical ramifications of immuno-editing driven by antigenic competition**

At the cellular level, it is clear that cancer is a genetic disease arising as a clone that expands and grows in an unregulated manner. While it has always been presumed that neoplasia is a consequence of somatic cell mutations, only in the last few years the magnitude and diversity of these mutations have been elucidated by modern DNA sequencing technology. Immunotherapy is the premier biological approach to targeted therapies. In this case, the targets are tumor specific or associated antigens and the proteins expressed from these somatic cell mutations. While the immunotherapeutic approach for eliminating cancer was launched with the assumption that cancer cells were homogeneous, the recent genomic understanding of tumor cells indicates that there is both inter-and intra-tumoral heterogeneity. This presentation will discuss the paradoxes and consequences of this new knowledge of tumor cell biology for the immunotherapeutic approach to treating cancer. Also, it will explain on the key host-tumor interactions such as antigenic-competition and immune editing and how the former drives the immunogenic characterization of the tumor, which helps it, survive in an immunocompetent host. In addition the use of immuno-edited tumors as a source of a patient specific, autologous vaccine may provide a pathway for the development of a peptide based vaccine for prophylaxes of adenocarcinomas.

### **Biography**

Michael G Hanna has received his PhD in Experimental Pathology and Immunology from the University of Tennessee (TN, USA). He was a Consultant in NASA for the lunar receiving laboratory during Apollo 11 and 12, for which his expertise in Immunology was used in the testing of the lunar core powder for immunogenic or pathogenic materials. He has worked as the Director of the National Cancer Institute, Frederick Cancer Research Center (MD, USA) during 1974-83.

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