The provocative issue of tumor genomic heterogeneity in immunotherapy

While it has always been presumed that neoplasia is a consequence of somatic cell mutations, only in the last few years has the magnitude and diversity of these mutations been elucidated by modern DNA sequencing technology. Immunotherapy is the premier biological approach to targeted therapy. Target therapies require targets. In this case the targets are tumor specific or associated antigens, the proteins expressed from these somatic cell mutations. While the immunotherapeutic approach to 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 consequences of this new knowledge of tumor cell biology to the immunotherapeutic approach to treating cancer. What is more, this presentation will discuss the translational development of an active specific immunotherapeutic approach from preclinical to beneficial clinical benefit.

Biography

Michael G Hanna, Jr. received his PhD in Experimental Pathology and Immunology from the University of Tennessee in 1964. He also served as a consultant with 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 served during 1975-83 as Director of the National Cancer Institute, Frederick Cancer Research Center (MD, USA). Subsequently, he founded PerImmune Inc., in which he served as President and Chief Executive Officer. In 2007, he founded Vaccinogen Inc., where he served as Chairman and CEO. Currently, he is Chairman Emeritus. He served as Chairman of the Department of Commerce Biotechnology Advisory Committee (1984-9) and also participated in the Department of Defense Technical Working Group for Biotechnology (1988-9). His research resulted in over 225 publications in international peer-reviewed journals and book chapters, and he holds 10 patents related to immunotherapy. He is the recipient of numerous honors and awards and has served on many editorial boards.

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