

4th Annual Conference on
Preventive Oncology

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Cancer immunotherapy, immune checkpoint blockade and predictive biomarkers

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A notorious question in immunology has been whether an immune response could also be raised against cancer cells. Researchers have indeed, for a long time, studied if cancer prevention could be a primary function of the immune system. Based on current research, it is clear that the immune system can recognize and eliminate transformed cells. A growing number of studies have investigated the immune system of cancer patients and how it is prone to immunosuppression, due in part to the decrease of lymphocyte proliferation and cytotoxic activity. In solid tumors, one of the reasons for this phenotype is attributed to the immunoediting, tumor microenvironment, immune privilege and the expression of the negative immune checkpoints which lead to an insufficient T cell activity and consequently cancer progression. After the approval of immune checkpoint blockade anti-CTLA-4 and anti-PD-1 several costimulatory and coinhibitory molecules have been studied exhaustively. The immune monitoring studies have supported the hypothesis that combining immunotherapy and standard treatment or their use as monotherapy, can benefit patients developing several types of cancer; by analyzing their ligands, infiltration quality, co-stimulatory/inhibitory profile and microenvironment. Several assays such whole exome sequencing (WES), protein array, flow/mass cytometry (CyTOF), multicolor immunohistochemistry (IHC), Multiplexed Ion Beam Imaging (MIBI), Systematic evolution of ligands by exponential enrichment (SELEX), epigenetic modification and B/T cell receptor repertoire sequencing have been used to pursue potential biomarkers and contribute for the future of cancer immunotherapy. My talk will discuss the recent findings on immune checkpoint function and the use of checkpoint blockade on cancer immunotherapy.

Biography

Jorge Augusto Borin Scutti has completed his Master and PhD at Federal University of São Paulo (UNIFESP) and Post-doctoral studies from MD Anderson Cancer Center (MDACC). Currently, he is working as a Senior Research Scientist at Immunotherapy Platform (IMT) at MD Anderson Cancer Center working on immune monitoring cancer patients under immunotherapy, especially immune checkpoints inhibitors in several clinical trials in numerous types of cancer. He has published several scientific articles and book chapters in reputed journals.

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