EMORY UNIVERSITY | Emory Integrated Core Facilities

Subtype Specific Immune Profiling in Glioblastoma with Nanostring

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Arranged by:

Emory Integrated Genomics Core
Emory Integrated Core Facilities

Seminar, followed by Q&A.
Please join us!
Light refreshments served

Glioblastoma is the most aggressive primary brain tumor and is characterized by poor prognosis and limited response to treatment. Three molecular subtypes of have been defined using bulk tumor expression profiling: Proneural, Mesenchymal, and Classical. Although similar in histological presentation, each of these subtypes is typified by specific driver mutations and they behave differently with respect to oncogenic signaling and response to therapy. Furthermore, it has been suggested that each subtype has a unique immune microenvironment characterized by different proportions of immune cell infiltrates. To investigate this hypothesis, we utilized a custom Nanostring gene set to group human tumors into subtypes and performed immunohistochemical analysis of the immune cell compositions. This analysis uncovered an increased infiltration of macrophages and T-cells in the Mesenchymal subtype compared to the Proneural and Classical subtypes. We then utilized subtype-specific murine models and the Nanostring PanCancer Immune profiling panel to more broadly assess alterations in immune cell composition and signaling. The activity of the innate immune system was shown to be significantly different between subtypes with alterations in cytokine and chemokine signaling as a driving factor. Overall, these analyses confirm that subtype-specific differences in the immune microenvironment exist in glioblastoma. Furthermore, they hint at the pathways that underlie these differences and will inform future preclinical and clinical investigations.

Plus, learn about NanoString's enzyme-free, multi-analyte quantification platforms! The nCounter® Analysis System accelerates your research with both custom and curated quantitative mRNA and miRNA panels, including new content focused on metabolic profiling and CAR-T biology.

The new GeoMX™ Digital Spatial Profiler combines these quantitative techniques with spatial immunofluorescence to perform highly multiplexed, spatially resolved profiling experiments for RNA and protein.

Tuesday, October 15th, 2019
10:00 am-11:00 am
SOM-178P, School of Medicine

Gene Expression Research and Digital Spatial Profiling