Cellular Therapy Decision Tree

nanoString

START HERE

What Area of Cellular Therapy Do You Work In?

- **Neurodegenerative Disease (Disease Modeling)**
  - Do you need to assess neuron/Endothelial cell types or characterize neuron/ endothelial tissue function? — YES → **NeuroPath or GeoMx WTA**
  - Do you need to assess glial cell types or characterize glial tissue function? — YES → **Glial Profiling or GeoMx WTA**
  - Do you work with ESCs or iPSCs? — YES
    - Do you need to measure and troubleshoot pluripotency during early development, or characterize your stem cells, assess differentiation status, or screen for cell viability and proliferation during culturing? — YES → **Stem Cell Characterization Panel** — YES → Do you do HTP screening for cell differentiation? — YES → **Elements to PlexSet**
    - Do you work with specific lineage interests? — YES → **Panel Plus**
    - Do you assess cell culture conditions? — YES → **Metabolic Pathways Panel**
- **Tissue/Organ Repair, Ocular Disease, Diabetes, Cardiology (Regenerative Medicine)**
  - Do you need to deeply characterize tissue functionality? — YES → **Custom CodeSets or Elements**
  - Do you conduct studies in Model Organisms or Clinical Samples to understand tissue function? — YES → **GeoMx DSP WTA**
- **Oncology**
  - Do you work with CAR-T therapies? → **CAR-T**
  - Do you work with cancer stem cells? — YES → **PanCancer Pathways or Tumor Signaling 360**

    Note: no Stem Cell Panel
- **CAR-T**
  - Do you design CAR-Ts? — YES → **CAR-T Characterization Panel**
  - Do you manufacture CAR-Ts? — YES → **CAR-T Characterization Panel**; **Immune Exhaustion Panel**; **Panel Plus**

    Note: confirm CAR transgene insert

    3D Biology

    Note: quantify CAR protein expression
  - Do you characterize immune response or work with heme malignancies? — YES → **PCIP**
  - Do you work with solid tumors? — YES
    - Are you interested in TME status or response to CAR-T in the tumors? — YES → **IO360**
    - Are you interested in spatially evaluating pre-clinical solid tumor models, visualizing CAR inserts within TMEs or developing biomarkers to predict therapy outcomes? — YES → **GeoMx DSP RNA/Protein**
  - Do you work in post-transfusion/clinical development? — YES → **CAR-T Characterization Panel**

    Note: confirm engraftment, measure TCR diversity, monitor toxicity

    Immune Exhaustion Panel

FOR RESEARCH ONLY. Not for use in diagnostic procedures.

Cellular Therapy Decision Tree

Panel Name	Description	Sample Type	Applications	Selected Key Pathways
PanCancer Immune Profiling (Human/Mouse)	Profiles the innate and adaptive immune response to cancer as well as cancer testis antigens. Contains signatures to quantify the relative abundance of 14 different immune cell types.	Blood, PBMCs, Tumor tissue	Focused on lymphocyte (B and T cell) biology, regardless of context. Also B and Tcell tumors. Stronger on adaptive immunity than other immune panels.	B cell Functions, Macrophage Functions, T cell Functions, Leukocyte Functions
PanCancer IO 360 (Human/Mouse)	Ideal for studying solid tumors, the microenvironment, and immune response, with the strongest focus on the immune response. Contains 48 signatures, including the 18-gene Tumor Inflammation Signature (TIS) and 14 signatures to quantify the relative abundance of different immune cell types.	A whole tumor sample (not sorted cells). Ideally solid tumor but doesn't have to be.	Immunooncology (IO) studies, where a comprehensive profile is desired but the primary focus is the immune response.	Antigen Presentation, Costimulatory Signaling, Cytokine & Chemokine Signaling, Interferon Signaling, Myeloid Compartment, Lymphoid Compartment
Metabolic Pathways (Human/Mouse)	Elucidate the molecular mechanisms behind alterations in metabolic/ signaling pathways and cell stress with an emphasis on immunometabolism/ cancer metabolism.	Any	Any application where metabolism is the primary focus	Fatty Acid Oxidation, Fatty Acid Synthesis, AMPK, Glycolysis, Tryptophan/Kynurenine Metabolism
CAR-T Characterization (Human)	Measures eight essential components of CAR-T cell biology, e.g., T cell activation, phenotype, metabolism, and exhaustion. Contains signatures to quantify the relative abundance of 14 different immune cell types.	CAR-T cells, T cells, NK cells, TILs, Treg, Th1, Th2, Th9, Th17, etc.	Any time when the T cell is the primary focus.	T cell Exhaustion Markers, Treg, Th1, Th2, Th17, Th9, TCR Diversity, Interleukin Signaling, Chemokine Signaling, NFAT
Glial Profiling (Human/Mouse)	Study glial functionality in any healthy or pathological setting.	Brain and spinal cord tissue, sorted or cultured microglia, astrocytes or oligodendrocytes.	Appropriate for any setting in which glial contribution is being investigated. Includes neurodegenerative disease, pain, development, psychiatric disorders, injury (TBI/SCI), stroke and more!	A1/A2 Astrocyte Signatures, Disease-Associated Microglia, Cannabinoid Signaling, Oligodendrocyte Differentiation
Neuropathology (Human/Mouse)	Broad coverage of all pathways related to pathology in the brain.	Brain or spinal cord tissue, sorted or cultured neurons.	All neurodegenerative diseases and pathological CNS insults, with an emphasis on neurons (function, effects of disease/insult on neurons and neuronal degeneration).	Axon and Dendrite Structure, Myelination, Neuron Cytoskeleton, Transmitter Release, Transmitter Response and Reuptake, Transmitter Synthesis and Storage
Stem Cell Characterization (Human/Mouse)	Deeply characterize and optimize stem cell development by evaluating viability, confirming functionality and assessing stem cell health during production and easily detect contamination.	Cultured cells/cell lysates, sorted cells, FFPE-derived RNA, total RNA, fragmented RNA	Cellular Therapy, Regenerative Medicine, Stem Cell Culturing Quality Control,	Stemness, Pluripotency , Regulatory Signaling, Epigenetics, Mechano-Signaling, Metabolism, Differentiation Signaling, Lineage Specification
GeoMx DSP WTA (Human/Mouse)	Whole transcriptome coverage with probes specific to protein coding mRNA sequence	Common sample types such as FFPE, FF and across all human tissues.	Explore any target and any pathway in biological ROIs in oncology, immunology, neuroscience, developmental biology, and other diverse fields.	Explore pathways across the whole transcriptome in user defined ROIs.
Immune Exhaustion (Human/Mouse)	Understand the mechanisms behind T cell, B cell, and NK cell exhaustion by profiling for 785 genes across 47 pathways.	Any	Immuno-oncology, CAR-T cell therapy or other adoptive immune cell therapy, infectious disease	Immune Activation, Immune Suppression, Epigenetics, Immune Status, Immune Checkpoints, Metabolism and Microenvironments

FOR RESEARCH ONLY. Not for use in diagnostic procedures.