Precision Oncology Diagnostic: Epithelial-to-Mesenchymal Transition Gene Signature Technology for Metastasis Prediction and Personalized Cancer Care

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TECHNOLOGY DESCRIPTION

UCSF inventors have developed advanced diagnostic technology that utilizes a panel of 100 epithelial-to-mesenchymal transition (EMT) genes to assess the metastatic potential of cancer tumors. Leveraging GRO-seq, a cutting-edge method that detects nascent transcriptional activity genome-wide, they have identified key EMT gene activations linked to malignant transformation and metastasis. This gene signature addresses the unmet need for reliable metastasis prediction, enabling oncologists and patients to make informed treatment decisions at the time of diagnosis. By capturing early transcriptional changes, the tool provides actionable insights to guide personalized therapies and improve patient outcomes. With robust validation data demonstrating shared EMT pathways activated by distinct cancer triggers, this technology offers a transformative solution for oncology diagnostics. Ideal applications include diagnostic tests, companion diagnostics, and research tools to advance cancer care and precision medicine.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

Breakthrough cancer technologies, Personalized therapy development, Gene signature technology for cancer care, Metastasis prediction technology, EMT gene panel for cancer diagnostics, Oncology companion diagnostics, Diagnostic technology for precision medicine, Precision oncology investment, Cancer diagnostic tools

CATEGORIZED AS

- **Biotechnology**
  - Other
- **Medical**
  - Diagnostics

- Disease: Cancer
- **Research Tools**
  - Bioinformatics
  - Screening Assays

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