

Background:

- Histological grading is the key factors affecting the prognosis of patients and instructive in guiding treatment and assessing recurrence in non-functional pancreatic neuroendocrine tumor (NF-Pan-NET).
- Approximately one-third of patients without copy number variation (CNV) alteration and the prognosis of these patients are better than that of patients with CNV alteration.
- Tumor classification based on CNV also showed significant value in evaluating prognosis. However, the difference between CNV and histological grading is unclear.

Methods:

- We recruited 17 NF-Pan-NET patients and analyzed their single-cell sequencing profiles to map associated genetic landscape and cell type.

Results:

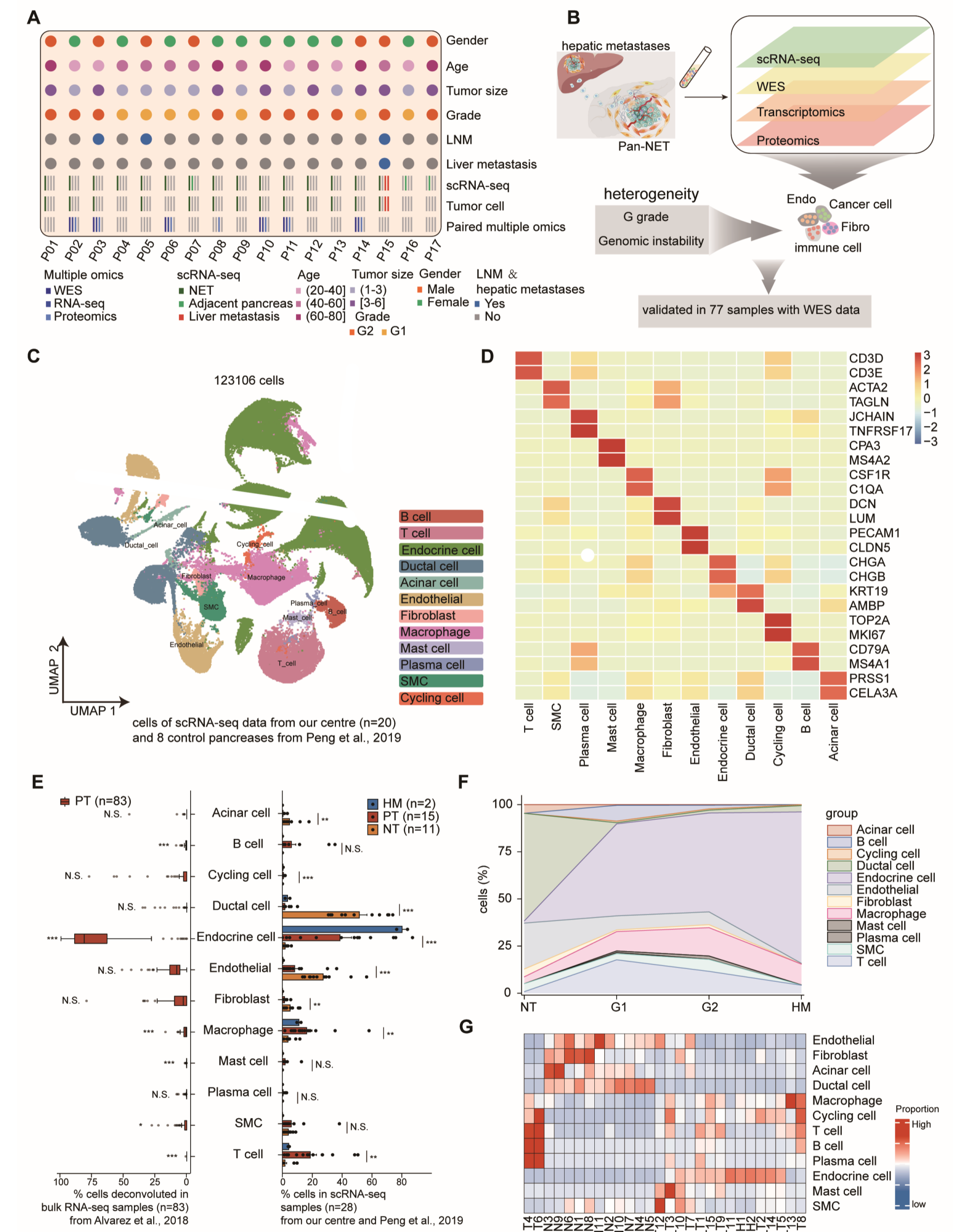
- The classification basis on genomic instability of the bulk tissues was better than histological grading in distinguishing tumor cells at scRNA-seq.
- We revealed that the activated core pathways of tumor cells were significantly different under different histological gradings and genomic instability patterns. In particular, patients with liver metastases had specific activation pathways.
- Deciphering the differences of the tumor microenvironment through single-cell sequencing, we found that tip cells, lymphatic endothelial cells, macrophages, CD1A+ dendritic cell, Treg, MAIT, ILC and CAFs might participate in the process of hepatic metastases.

Future Directions for Research :

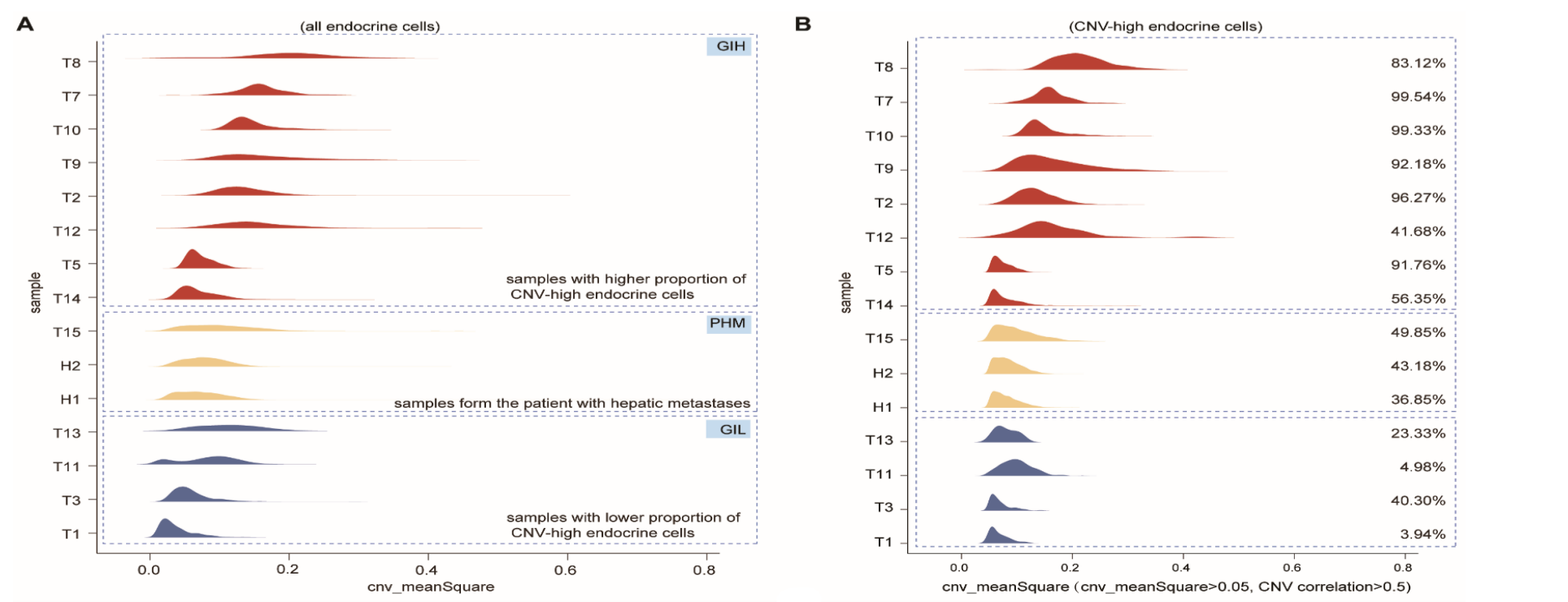
- We will explore the underlying molecular mechanisms to reveal how genomic instability affects tumor progression in a larger cohort.

Results/Graphs/Data:

- Single-cell profiling of the tumor ecosystem in NF-Pan-NET

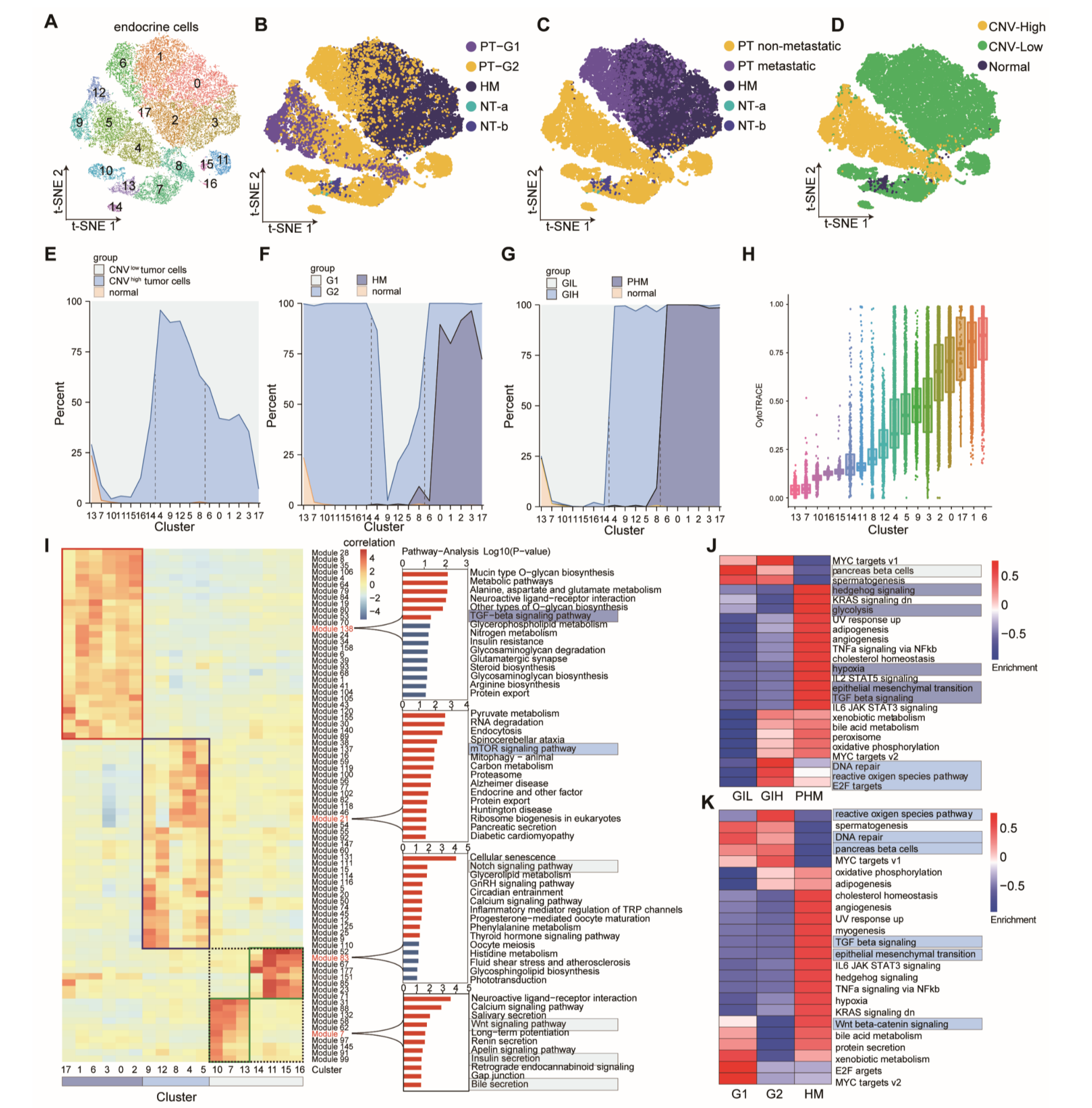


- The heterogeneity of copy number variation



Results/Graphs/Data (continued):

- Revealing the heterogeneity of tumor cells under the pattern of genomic instability and histological grading



- The combination of genomic instability and histological grading was of great value in evaluating clinical prognosising in nearby tumor cells

