

EXPLORING AND MODELLING THE CYST MICROENVIRONMENT IN POLYCYSTIC LIVER DISEASE

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Poster

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Spatial mapping of the cyst microenvironment in polycystic liver disease reveals PD-1-positive exhausted T cells as potential immunotherapy targets.

KEY POINTS

- Cystic epithelial cells in polycystic liver disease significantly increase expression of cytokines including Ccl20, Tgfb and Tnf, actively recruiting immune infiltrates to cystic lesions.
- T cells are the most abundant immune cell type within the human PLD cyst microenvironment, while neutrophils are reduced.
- T cells within the PLD cyst microenvironment express PD-1, suggesting an exhausted state that may be susceptible to anti-PD-1 therapeutics.
- The authors propose that exhausted PD-1-positive T cells represent an immunotherapy candidate for pharmaceutical intervention in human PLD, where no widely approved pharmaceutical treatments currently exist.
- This research combines GeoMx spatial transcriptomics, high-plex immunophenotyping, single cell RNA sequencing, and organoid models to characterise the cyst microenvironment in a disease where cyst growth causes hepatomegaly, abdominal pain, and poor quality of life.

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