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The CD8+ T CELL TRAJECTORY SUBTYPES DECODE TUMOR HETEROGENEITY AND PROVIDE TREATMENT RECOMMENDATIONS FOR HEPATOCELLULAR CARCINOMA

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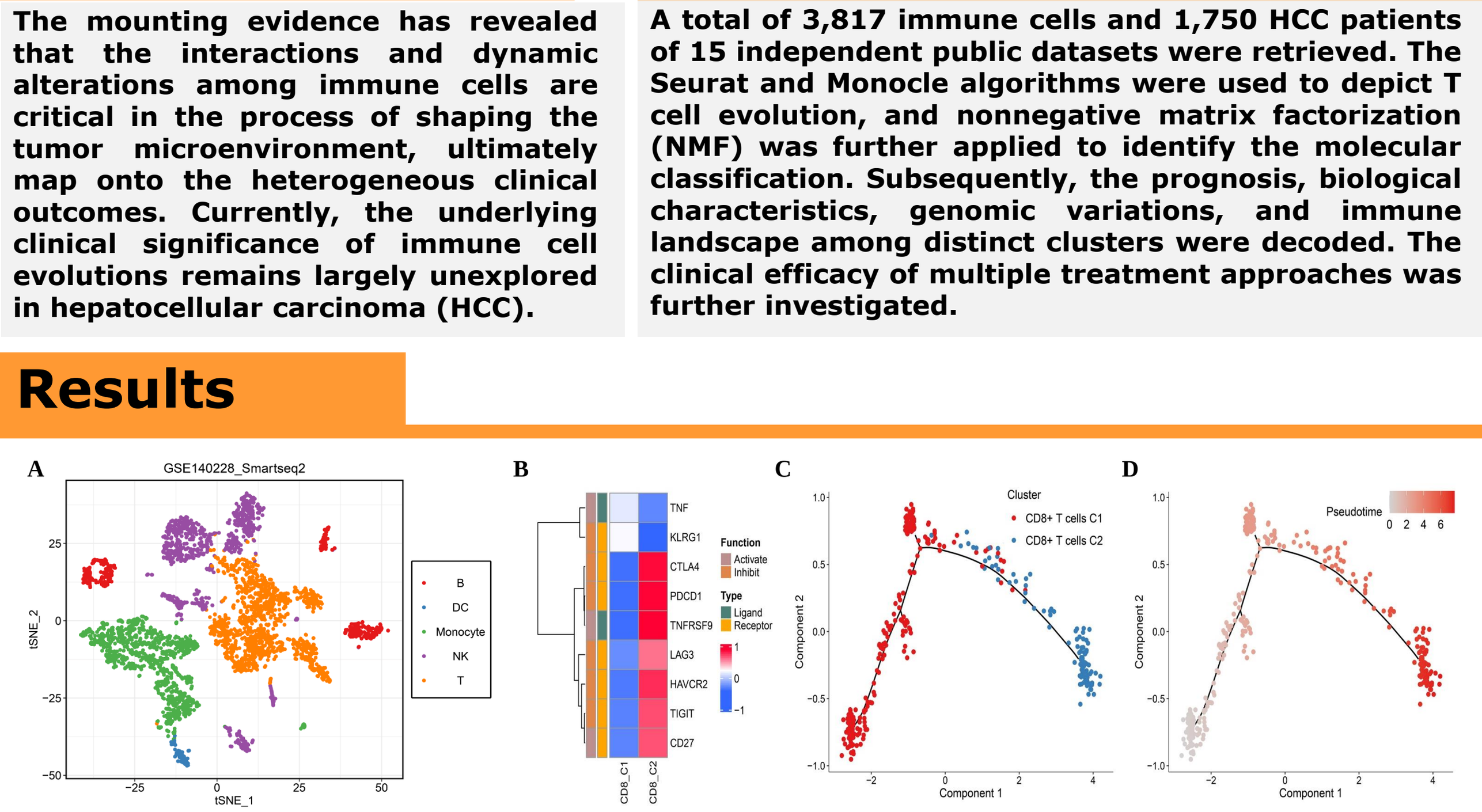
Introduction

The mounting evidence has revealed that the interactions and dynamic alterations among immune cells are critical in the process of shaping the tumor microenvironment, ultimately map onto the heterogeneous clinical outcomes. Currently, the underlying clinical significance of immune cell evolutions remains largely unexplored in hepatocellular carcinoma (HCC).

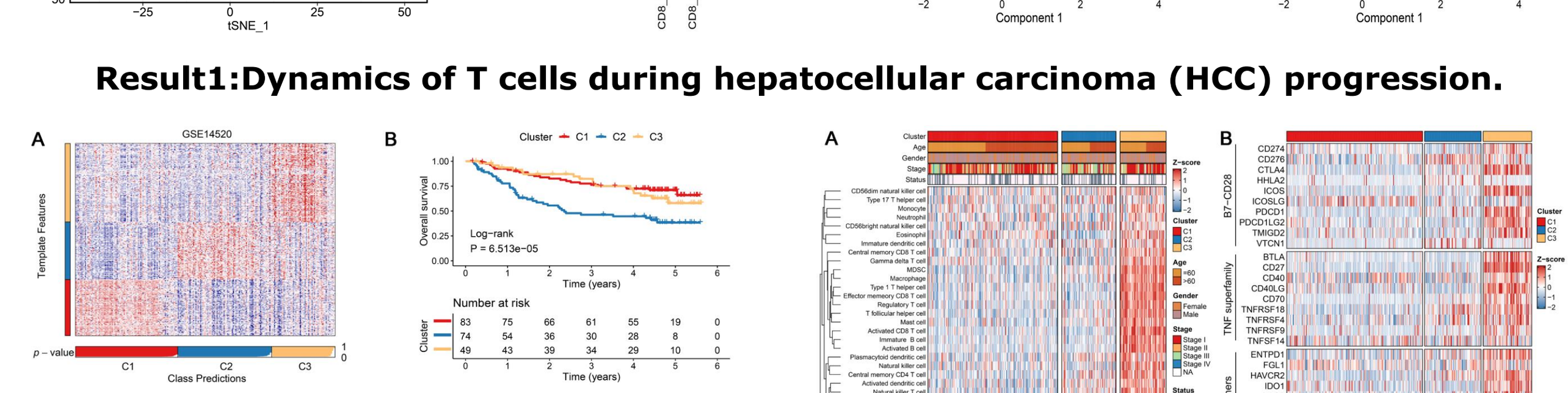
Materials and methods

A total of 3,817 immune cells and 1,750 HCC patients of 15 independent public datasets were retrieved. The Seurat and Monocle algorithms were used to depict T cell evolution, and nonnegative matrix factorization (NMF) was further applied to identify the molecular classification. Subsequently, the prognosis, biological characteristics, genomic variations, and immune landscape among distinct clusters were decoded. The clinical efficacy of multiple treatment approaches was further investigated.

Results



Result1:Dynamics of T cells during hepatocellular carcinoma (HCC) progression.



Result2:The identification, validation, and exploration of clinical features among three heterogeneous clusters.

Result3:The immune landscape and cutting-edge immunotherapy responses providing treatment recommendations.

Conclusion

Our study developed three clusters with distinct characteristics based on immune cell evolutions. For specifically stratified patients, we proposed individualized treatment strategies to improve the clinical outcomes and facilitate the clinical management.