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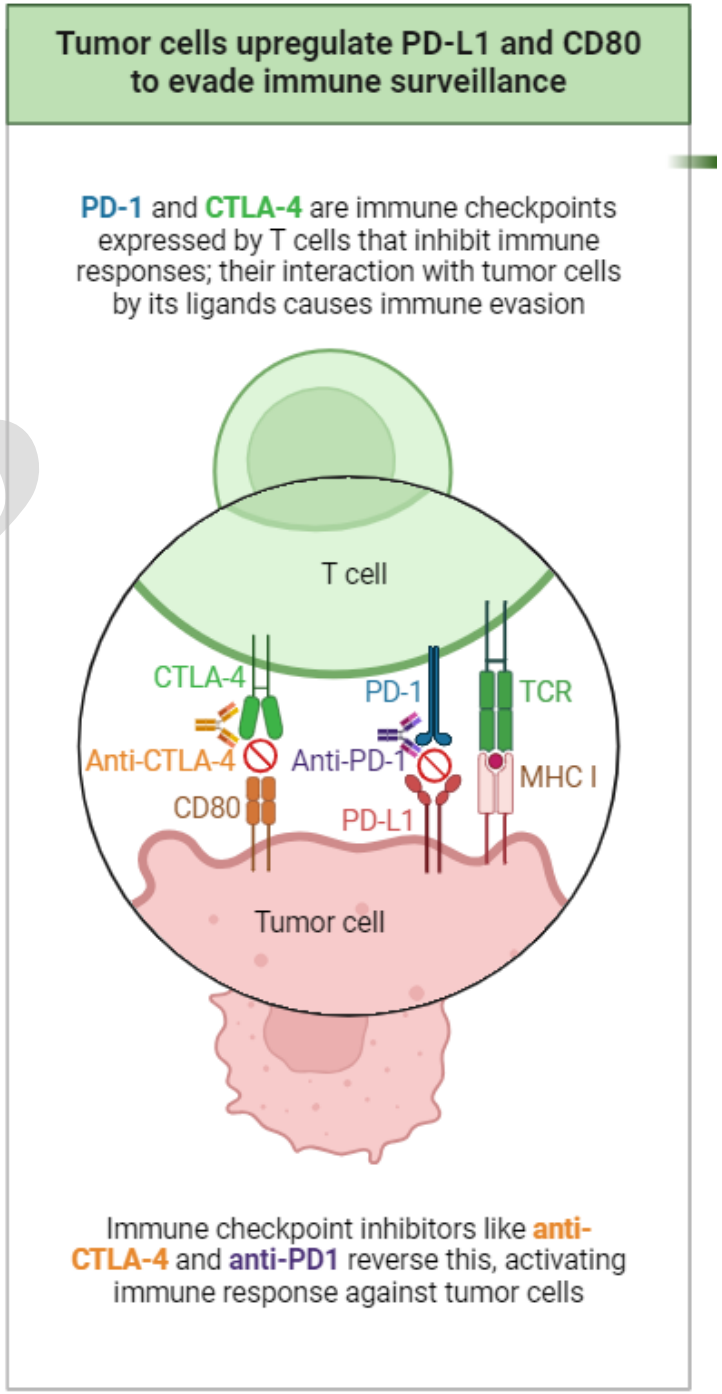
Single-cell and spatial transcriptomic analysis reveals that an immune cell-related signature could predict clinical outcomes for microsatellite-stable colorectal cancer patients receiving immunotherapy

Key words: Colorectal cancer; Microsatellite stable; Immunotherapy; Single-cell RNA sequencing; Spatial transcriptomics

Research Summary

This study found that anti-PD-1 antibody combined with VEGFRi presented an improved clinical benefit in MSS CRC with manageable toxicity. MCICRS could serve as a robust and promising tool with which to predict clinical outcomes for individual MSS CRC patients receiving immunotherapy.

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Innovation point

1. Compared to VEGFRi alone, anti-PD-1 antibody and VEGFRi combination exhibited a prolonged survival.

2. Through scRNA-seq analyses, we determined 10 MSS CRC-enriched immune cell types.

3. Based on machine learning algorithms, we obtained MSS CRC immune cell-related signature (MCICRS), an independent risk factc for the prognosis of MSS CRC patients.

4. Low-MCICRS group presented a higher immune cell infiltration and immune-related pathway activation, and a significant relation with the superior efficacy of pan-cancer immunotherapy.

