

Single-Cell Genomics Reveals Clonal Evolution in Colorectal Tumours

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ABSTRACT

Intratumoural heterogeneity shapes treatment response. We applied single-cell DNA and RNA sequencing to 36 colorectal tumours spanning disease stages, reconstructing clonal phylogenies at single-cell resolution. Branched evolution dominated in mismatch-repair-proficient tumours, while deficient tumours showed punctuated bursts of mutation. Subclonal diversity at diagnosis predicted shorter progression-free survival independently of stage.

KEYWORDS

single-cell sequencing, clonal evolution, colorectal cancer, tumour heterogeneity

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