

KIRC - Kidney renal clear cell carcinoma

Subtype	Biology & Expression	Genomic Alterations	Clinical Features
ccA (Clear cell A)	<ul style="list-style-type: none">• High oxidative phosphorylation & fatty-acid metabolism• Strong angiogenic (VEGF) signaling• Low proliferation & immune-infiltrate signatures	<ul style="list-style-type: none">• VHL loss or mutation• Frequent PBRM1 mutations• Relatively low overall mutation and CNA burden	<ul style="list-style-type: none">• Favorable prognosis• Lower stage/grade at diagnosis• Longer overall survival• Better responses to VEGF-targeted therapies
ccB (Clear cell B)	<ul style="list-style-type: none">• Upregulated cell-cycle, EMT & extracellular-matrix remodeling programs• High proliferation• Elevated immune/inflammatory signatures	<ul style="list-style-type: none">• Enriched BAP1 and SETD2 mutations• Higher chromosomal instability and CNA burden	<ul style="list-style-type: none">• Poor prognosis• Higher stage/grade at presentation• Shorter overall survival• Less benefit from anti-angiogenic agents