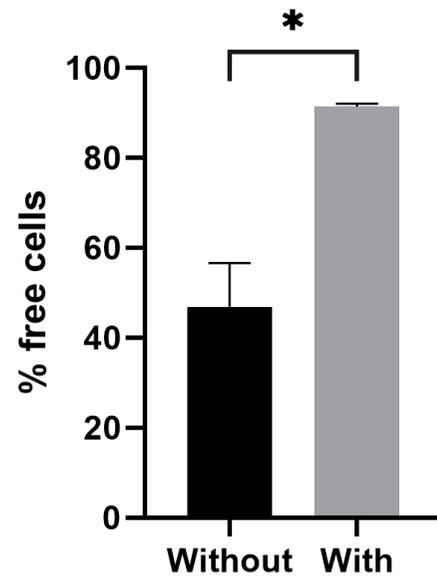
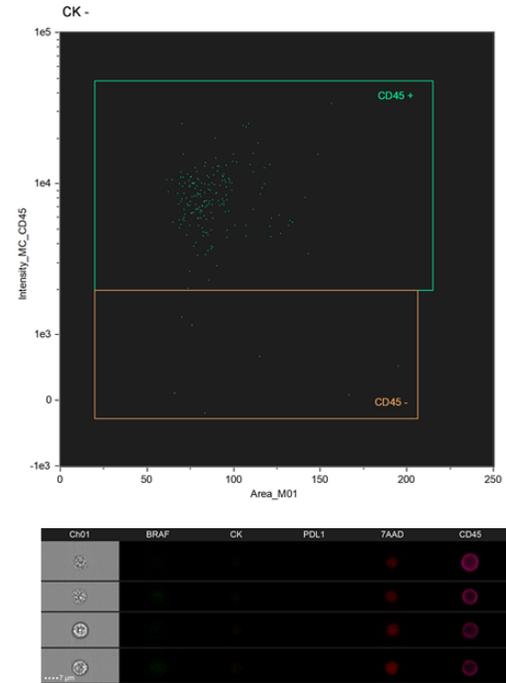
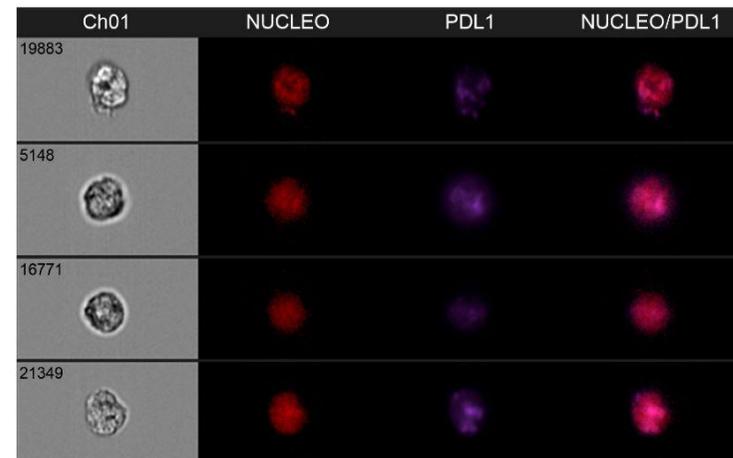
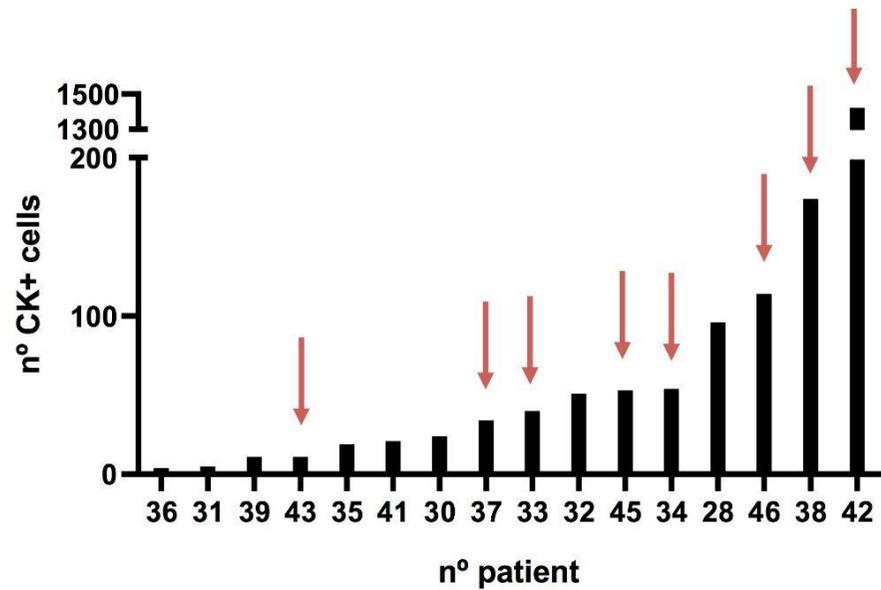


A**B**

Supplementary figure S1: Protocol optimization. **A** is a bar graph showing the percentage of cytokeratin-positive beads-free cells without using papain (black) or adding papain (grey) for detachment of cells from beads. **B** is a scatter plot showing leukocytes by their CD45+ staining in a cytokeratin (CK) negative population. P value is **X**



Supplementary figure S2: Nuclear localisation of PD-L1 expression on CTCs. Left part shows a bar graph with increasing number of cytokeratin (CK) circulating tumor cells. Patients with nuclear expression of PD-L1 is indicated with a red arrow. Right part shows an example of co-localised nuclear and PD-L1 staining.