



**Fig. S5. a**, Heatmaps showing the expression of five malignant signatures in malignant cells (columns) from 11 tumour samples containing at least 50 malignant cells. **b**, tSNE plot of 7,581 malignant cells from 11 patients clustered using only genes from the malignant signatures, with each cell colour-coded to indicate the associated cell clusters (left) and corresponding patients (right). **c**, Heatmap showing the average expression of five malignant signatures in each cell cluster shown in (b).