



Supplementary Figure S5: The expression of positive cells of seven immune checkpoints and coexpression patterns in the discovery and validation sets. (A) The median number with IQR showing the expression level of seven immune checkpoints calculated by digital pathology in the discovery set ($n = 212$). UpSet plots showing the coexpression pattern of seven immune checkpoints in the discovery set (B) and validation set (C). The horizontal bars on the left show the number of patients with a high expression of each immune checkpoint. The black beads on the bottom right indicate a high expression of corresponding checkpoints, and the grey beads indicate a low expression of corresponding checkpoints. The black beads connected by the black lines represent the coexpression of the corresponding checkpoints with a high expression status. The vertical bars on the top right show the number of patients with coexpression.

Abbreviations: NB, neuroblastoma; IQR, interquartile range; PD-L1, programmed death ligand 1; IDO1, indoleamine-pyrrole 2,3-dioxygenase 1; TIM-3, T cell immunoglobulin and mucin domain containing-3; ICOS, inducible costimulatory molecule; OX40: costimulatory molecule 40.