



Supplementary Figure S7. CD4⁺ and CD8⁺ T cells infiltrations are correlated with B cell infiltrations and are associated with improved overall survival in endometrial cancer. (A) Percentages of CD3⁺CD4⁺ T cells (*left*) and CD3⁺CD8⁺ T cells (*right*) is significantly higher in tumors with B cell infiltration. ***, $P \leq 0.001$. Unpaired two-tailed Mann Whitney test. (B) Tumors with higher (median threshold) B cell infiltration have significantly higher CD3⁺CD4⁺ T cells (*left*) and CD3⁺CD8⁺ T cells (*right*) infiltration (*right*). ***, $P \leq 0.001$. Unpaired two-tailed Mann Whitney test. (C) Averaged spatial association networks of each histology type in total tumor area. The color and width of each edge in the network represents the spatial association, with reds indicating clustering, and blues indicating the markers are found in different areas. The color of each node reflects the ranked average quadrat count, across histological type: 1 (yellow) indicates the histological type has the highest average quadrat count, while 4 (black) means the histological type has the lowest quadrat count. Polygons around collections of markers indicate that the markers are part of a spatial “community” or niche, found using the Leiden community detection algorithm. (D) Histogram of observed spatial patterns between IgA and pIgR at varying distances in total tumor area, as measured using the cross-type L-function. The height of each bar indicates how many cores exhibited the spatial pattern (random or clustered) at each radius for each histological type. (E) Empirical cumulative distribution function of the distances at which clustering between IgA and pIgR was observed in total tumor area. The Kolmogorov-Smirnov test was used to determine if there was a significant difference in the distribution of clustering radii among the different histology types. (F) Percentage of CD3⁺CD4⁺ T cells (averaged from duplicated cores) is associated with improved outcome (threshold highest/lowest 30%; $P = 0.0350$). *, $P \leq 0.05$, two-sided log-rank (Mantel–Cox) test. (G) Percentage of CD3⁺CD8⁺ T cells (averaged from duplicated cores) is associated with improved outcome (threshold highest/lowest

30%; $P = 0.0758$). ns, not significant, $P > 0.05$, two-sided log-rank (Mantel–Cox) test. **(H)** Multivariable Cox regression analysis showing clinical covariates (stage, tumor size or patient's age) adjusted Hazard ratios and P values for the survival analyses shown in **Fig.5A-C**. **(I)** Multivariable Cox regression analysis showing clinical covariates adjusted Hazard ratios and P values for the survival analyses shown in **Supplementary Fig. S7F&G**. **(J)** Multivariable Cox regression analysis showing grade or patient's age adjusted results for the survival analyses shown in **Fig.5D&E**.