

Supplementary Table 1. Antibody sources and staining conditions.

| Markers | Antibody source | Cellular localization | Species | Antigen Retrieval | Dilution |
|---------|-------------------------|-----------------------|-------------------|---------------------------|----------|
| CD3 | DAKO | Membranous | Rabbit Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD4 | DAKO | Membranous | Rabbit Monoclonal | Tris/EDTA buffer (pH 9.0) | 1:400 |
| CD8 | Abcam | Membranous | Rabbit Monoclonal | Tris/EDTA buffer (pH 9.0) | 1:500 |
| CD14 | Sigma | Cytoplasmic | Rabbit polyclonal | Citrate buffer (pH 6.0) | 1:500 |
| CD20 | Abcam | Membranous | Rabbit polyclonal | Tris/EDTA buffer (pH 9.0) | 1:200 |
| CD27 | Abcam | Membranous | Rabbit Monoclonal | Tris/EDTA buffer (pH 9.0) | 1:500 |
| CD45RA | Abcam | Membranous | Mouse Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD45RO | DAKO | Membranous | Mouse Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD57 | DAKO | Cytoplasmic | Mouse Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD66b | BD | Cytoplasmic | Mouse Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD68 | DAKO | Cytoplasmic | Mouse Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| CD103 | Abcam | Cytoplasmic | Rabbit Monoclonal | Tris/EDTA buffer (pH 9.0) | 1:1000 |
| CXCR5 | CST | Membranous | Rabbit Monoclonal | Citrate buffer (pH 6.0) | 1:200 |
| FOXP3 | ThermoFisher Scientific | Nuclear | Rabbit Monoclonal | Citrate buffer (pH 6.0) | 1:20 |
| PD-L1 | CST | Membranous | Rabbit Monoclonal | Tris/EDTA buffer (pH 9.0) | 1:200 |
| PD1 | CST | Membranous | Rabbit Monoclonal | Citrate buffer (pH 6.0) | 1:200 |

Supplementary Table 2. Cox proportional hazards regression model showing the association of variables with overall survival.

| Variables | Univariate analysis | | | Multivariate analysis | | |
|-----------------------------------|---------------------|--------------|----------------|-----------------------|--------------|----------------|
| | HR | 95%CI | <i>P</i> value | HR | 95%CI | <i>P</i> value |
| CA19-9 ($\geq 37 / < 37$, U/mL) | 1.001 | 1.001-1.002 | <0.001 | 1.001 | 1.001-1.002 | <0.001 |
| ALT ($\geq 35 / < 35$, U/L) | 1.006 | 1.001-1.010 | 0.02 | 0.998 | 0.991-1.005 | 0.56 |
| GGT ($\geq 40 / < 40$, U/L) | 1.004 | 1.002-1.006 | <0.001 | 1.004 | 1.001-1.006 | 0.001 |
| Tumor numbers | 1.070 | 1.009-1.136 | 0.03 | 1.087 | 1.014-1.164 | 0.02 |
| Tumor diameter, cm | 1.069 | 1.012-1.130 | 0.02 | 1.018 | 0.955-1.086 | 0.58 |
| Lymphoid metastasis (yes/no) | 2.430 | 1.061-5.566 | 0.04 | 3.074 | 1.275-7.411 | 0.01 |
| HRI score (low/high) | 5.415 | 2.532-11.580 | <0.001 | 6.169 | 2.651-14.355 | <0.001 |

CA19-9, carbohydrate 19-9; ALT, alanine aminotransferase; GGT, γ -glutamyl transpeptidase; HRI, histopathologic-related immunoscore.