

Supplementary Materials: Perivascular Tumor-Infiltrating Leukocyte Scoring for Prognosis of Resected Hepatocellular Carcinoma Patients

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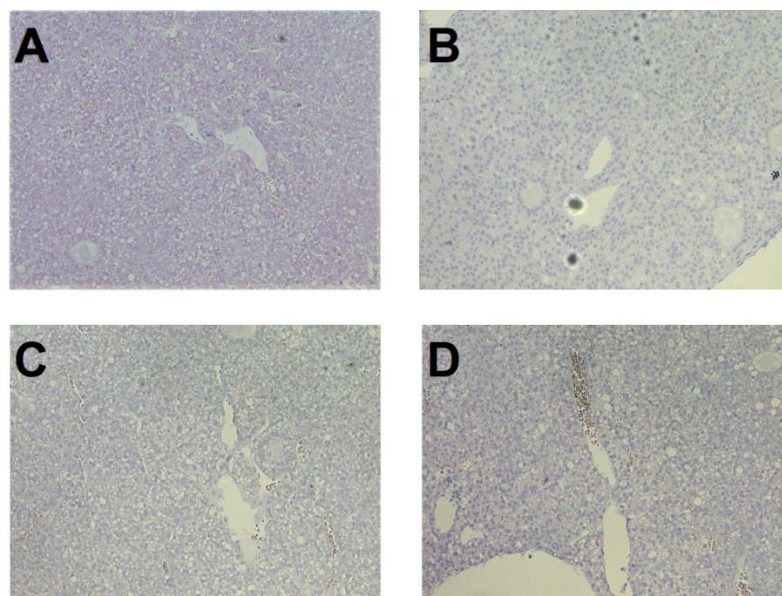


Figure S1. No Infiltration of CD3⁺ (A), CD8⁺ (B), CD20⁺ (C), and CD66b⁺ (D) Cells under 100× Magnifications.

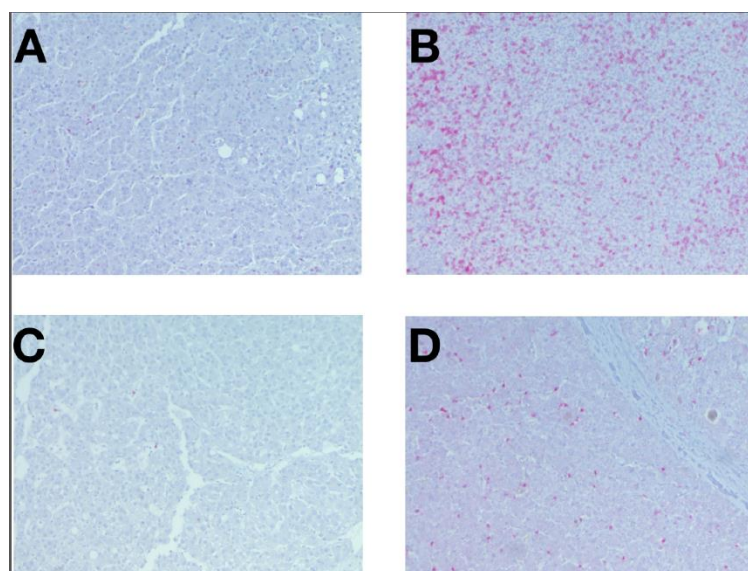


Figure S2. Evenly Distributed Infiltration Patterns of CD3⁺ (A), CD8⁺ (B), CD20⁺ (C), and CD66b⁺ (D) Cells under 100× Magnifications.

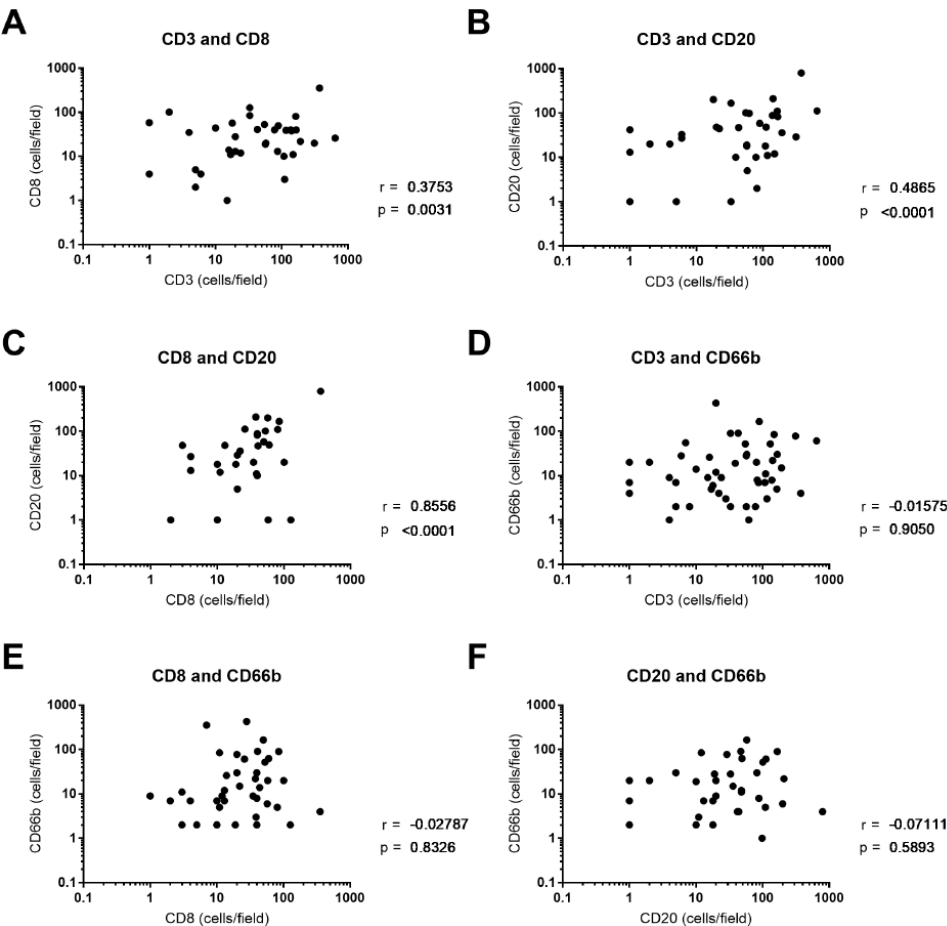


Figure S3. Correlations among perivascular-infiltrating CD3⁺, CD8⁺, CD20⁺, and CD66b⁺ cells. (A) Correlation between CD3⁺ and CD8⁺ cells; (B) Correlation between CD3⁺ and CD20⁺ cells; (C) Correlation between CD8⁺ and CD20⁺ cells; (D) Correlation between CD3⁺ and CD66b⁺ cells; (E) Correlation between CD8⁺ and CD66b⁺ cells; (F) Correlation between CD20⁺ and CD66b⁺ cells.

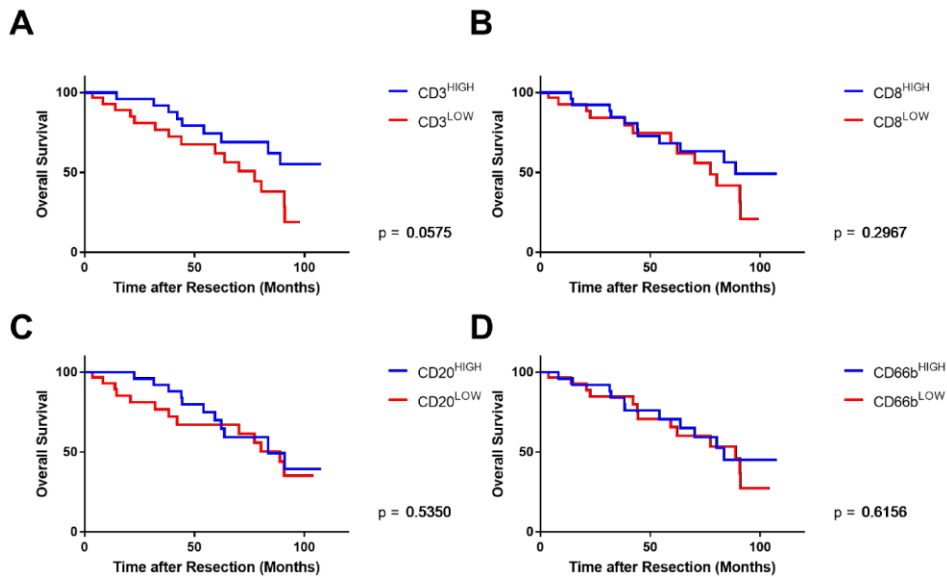


Figure S4. Kaplan–Meier Curves of CD3⁺ (A), CD8⁺ (B), CD20⁺ (C), and CD66b⁺ (D) Cells on Overall Survival.

Table S1. Number of Cases in Three Different Patterns.

Negative	Evenly Distribution	Perivascular Distribution
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CD3	9(15.0%)	16(26.7%)	35(58.3%)
CD8	20(33.3%)	10(16.7%)	30(50.0%)
CD20	23(38.3%)	10(16.7%)	27(45.0%)
CD66b	2(3.3%)	24(40.0%)	34(56.7%)

Table S2. Differences in demographic and clinical laboratory values in dependence of high vs. low perivascular infiltration of CD3⁺, CD8⁺, CD20⁺, CD66b⁺ leukocytes.

Variables		CD3			CD8			CD20			CD66b		
		Low	High	<i>p</i>	Low	High	<i>p</i>	Low	High	<i>p</i>	Low	High	<i>p</i>
Gender	Male	25	24	1.000	24	25	1.000	25	23	0.745	25	24	1.000
	Female	5	6		6	5		5	6		6	5	
Age (Years)		65.50 (17.00)	67.00 (15.00)	0.796	64.00 (20.00)	67.50 (14.00)	0.438	65.00 (18.00)	66.00 (13.00)	0.986	68.00 (16.00)	63.00 (23.00)	0.593
AFP (ng/ml)		8.75 (80.48)	18.20 (350.75)	0.495	7.60 (130.65)	14.10 (232.25)	0.887	13.40 (199.85)	7.10 (106.40)	0.895	14.45 (104.83)	9.80 (1391.50)	0.684
HBV	Yes	5	2	0.426	5	2	0.420	5	2	0.426	4	3	1.000
	No	23	23		22	24		23	23		25	21	
ETOH	Yes	6	5	1.000	7	4	0.505	6	5	1.000	6	5	1.000
	No	22	21		21	22		22	21		23	20	
Cirrhosis	Yes	8	7	1.000	7	8	0.764	8	7	1.000	8	7	1.000
	No	20	19		21	18		20	19		21	18	
Tumor Number	Single	24	26	0.472	26	24	0.472	26	24	1.000	25	25	1.000
	Multiple	6	3		3	6		5	4		5	4	
Microvascular Invasion	Yes	12	6	0.155	8	10	0.773	8	10	0.566	10	8	0.777
	No	16	20		19	17		20	16		18	18	
Macrovascular Invasion	Yes	3	3	1.000	4	2	0.388	2	4	0.417	4	2	0.417
	No	20	23		18	25		23	20		20	23	
UICC Stage	I-II	8	5	0.339	8	5	0.339	6	7	1.000	4	9	0.196
	III-IV	16	21		16	21		18	19		21	16	
Milan Criteria	In	2	3	0.662	2	3	1.000	3	2	1.000	2	3	1.000
	Out	25	22		24	23		25	22		24	23	
BCLC Stage	A	5	2	0.232	3	4	1.000	3	4	1.000	3	4	1.000
	B	16	21		19	18		19	18		18	19	
BRC Criteria	In	8	14	0.076	9	13	0.376	10	12	0.768	13	9	0.554
	Out	15	8		13	10		12	11		11	12	

BILI	0.70 (0.40)	0.70 (0.30)	0.836	0.60 (0.30)	0.70 (0.33)	0.976	0.70 (0.33)	0.70 (0.30)	0.635	0.60 (0.23)	0.70 (0.50)	0.391
ALB	44.00 (5.00)	43.00 (7.25)	0.425	41.00 (5.00)	44.00 (5.00)	0.004	42.00 (5.50)	44.00 (5.00)	0.019	43.00 (6.00)	44.00 (3.00)	0.706
ALT	45.00 (40.00)	40.00 (31.00)	0.780	46.00 (53.25)	34.00 (31.50)	0.060	43.00 (32.75)	42.00 (35.00)	0.798	44.00 (21.75)	30.00 (41.00)	0.254
AST	52.50 (42.00)	41.00 (20.00)	0.419	52.00 (39.50)	38.00 (30.00)	0.058	46.00 (33.25)	41.00 (34.00)	0.329	46.00 (25.75)	41.00 (47.00)	0.717
APTT	28.00 (6.00)	29.00 (6.00)	0.755	28.00 (7.50)	29.00 (4.50)	0.537	28.00 (7.50)	29.00 (5.50)	0.690	27.00 (7.00)	29.00 (5.00)	0.815
CREA	1.00 (0.23)	1.00 (0.25)	0.793	0.95 (0.30)	1.00 (0.22)	0.373	0.90 (0.30)	1.00 (0.29)	0.155	1.00 (0.28)	1.00 (0.25)	0.793
CRP	7.00 (19.25)	5.00 (12.50)	0.653	7.00 (31.00)	5.00 (9.00)	0.849	5.00 (27.00)	6.50 (10.75)	0.455	6.00 (14.00)	5.50 (20.50)	0.415
WBC (mean±SD)	7230±20 98	7263±21 26	0.951	7179 ±2229	7315 ±1986	0.804	7210 ±2032	7286 ±2194	0.889	7143 ±1695	7357 ±2477	0.700
PLATELETS	225.00 (192.75)	211.50 (114.50)	0.387	214.50 (206.75)	222.00 (105.75)	0.348	226.00 (192.00)	214.00 (121.00)	0.311	200.00 (110.00)	265.00 (157.00)	0.294

Abbreviations: AFP: serum alpha-fetoprotein; ALT: alanine transaminase; AST: aspartate transaminase; APTT: activated partial thromboplastin time; CRP: C-reactive protein. Normally distributed data was compared with the T-test and not normally distributed data with Mann-Whitney u test. Contingency data was compared using the Fisher's exact test.

Table S3. Estimate Cumulative Proportion of Disease-free Surviving Regarding CD3⁺, CD8⁺, CD20⁺, and CD66b⁺ cells.

Groups	1-year	3-year	5-year	8-year
CD3 ^{LOW}	69.33%	51.57%	39.50%	6.83%
CD3 ^{HIGH}	82.03%	82.03%	57.55%	46.16%
CD8 ^{LOW}	64.39%	56.35%	42.91%	7.42%
CD8 ^{HIGH}	86.31%	75.95%	53.41%	42.48%
CD20 ^{LOW}	66.93%	52.60%	40.71%	17.81%
CD20 ^{HIGH}	84.86%	81.00%	50.72%	36.07%
CD66b ^{LOW}	75.68%	64.87%	45.79%	15.18%
CD66b ^{HIGH}	75.14%	71.38%	49.90%	32.34%

Table S4. Estimate Cumulative Proportion of Overall Surviving Regarding CD3⁺, CD8⁺, CD20⁺, and CD66b⁺ cells.

Groups	1-year	3-year	5-year	8-year
CD3 ^{LOW}	92.95%	76.72%	61.99%	19.02%
CD3 ^{HIGH}	100%	91.83%	74.35%	55.23%
CD8 ^{LOW}	92.64%	84.22%	68.35%	20.97%
CD8 ^{HIGH}	100%	84.62%	68.15%	49.22%
CD20 ^{LOW}	93.05%	76.72%	67.05%	35.20%
CD20 ^{HIGH}	100%	92.00%	70.00%	39.49%
CD66b ^{LOW}	96.67%	84.73%	65.57%	27.48%
CD66b ^{HIGH}	96.00%	84.00%	70.57%	45.12%

Table S5. Cox Multivariate Model for Predicting Overall Survival with Collett's Model for Selection of Covariates.

Variables	HR	95% CI	p
Age (≥60 years)	0.332	0.109 1.012	0.053
CD3 ⁺ Cells	2.754	1.158 6.548	0.022

Abbreviations: HR: Hazard ratio; CI: confidence interval.

Table S6. Cox Multivariate Model for Predicting Disease-Free Survival with Collett's Model for Selection of Covariates.

Variables	HR	95% CI	p
Gender	3.405	1.517 7.645	0.003
CD8 ⁺ Cells	2.819	1.353 5.876	0.006

Abbreviations: HR: Hazard ratio; CI: confidence interval.

Table S7. Estimate Cumulative Proportion of Overall Surviving Regarding Scoring.

Groups	1-year	3-year	5-year	8-year
Scoring: 0-1	93.15%	80.57%	69.76%	11.27%
Scoring: 2-3	100%	88.00%	67.50%	55.23%

Table S8. Estimate Cumulative Proportion of Disease-free Surviving Regarding Scorings of Scoring.

Groups	1-year	3-year	5-year	8-year
Scoring: 0-1	63.95%	49.26%	40.93%	0%
Scoring: 2-3	88.71%	84.86%	56.83%	45.92%

Table S9. Cox Multivariate Model for Predicting Overall Survival with Collett's Model for Selection of Covariates.

Variables	HR	95% CI		<i>p</i>
Age	0.359	0.117	1.102	0.073
Cirrhosis	0.430	0.175	1.055	0.065
Scoring	3.624	1.406	9.338	0.008

Abbreviations: HR: Hazard ratio; CI: confidence interval.

Table S10. Cox Multivariate Model for Predicting Disease-Free Survival with Collett's Model for Selection of Covariates.

Variables	HR	95% CI		<i>p</i>
Gender	4.364	1.861	10.234	0.001
Scoring	4.113	1.841	9.190	0.001

Abbreviations: HR: Hazard ratio; CI: confidence interval.