

**Table S2. Median TTP and survival analysis**

	TTP (days) (median; range)	p-value			Hazard ratio (95% CI)
		Log-rank test	Cox univariate	Cox multivariate	
Breed		0.971	0.971		
Pure	171; 1-1403				0.984 (0.420-2.307)
Mixed	69; 35-588				ref
Sex		<b>0.005</b>	<b>0.025</b>	0.088	
Female	95; 35-1403				0.546 (0.250-1.195)
Spayed female	179; 34-325				0.761 (0.403-1.437)
Male	202; 1-988				0.501 (0.268-0.935)
Neutered male	24; 1-37				ref
Age		0.367	0.371		
<7 years	98; 1-1403				1.396 (0.672-2.901)
≥7 years	171; 24-988				Ref
Weight		0.715	0.717		
<10kg	63; 1-455				Ref
≥10kg	171; 1-1403				0.920 (0.585-1.447)
Stage		0.661	0.667		
III	78; 78-202				1.384 (0.314-6.094)
IV	60; 24-493				1.422 (0.636-3.182)
V	171; 1-1403				ref
Sustage		0.090	0.099	<b>0.004</b>	
a	180; 1-1403				0.703 (0.462-1.069)
b	69; 1-250				ref
Bone marrow		0.679	0.681		
Infiltrated	69; 1-588				Ref
Not infiltrated	171; 1-1403				0.921 (0.622-1.363)
Blood infiltration (%)			0.823		0.997 (0.967-1.027)
Bone marrow infiltration (%)			0.202	0.221	1.020 (0.989-1.052)
CD8+ cells (flow cytometry, %)			0.579		1.028 (0.931-1.135)
LDH activity		0.939	0.939		
Normal	98; 1-988				Ref
Increased	179; 1-1403				1.014 (0.710-1.448)
Pretreatment with steroids		0.306	0.313		
Yes	98; 1-325				Ref
No	171; 1-1403				0.813 (0.543-1.216)
Treatment		<b>0.001</b>	<b>0.002</b>	<b>0.001</b>	
Chemo	34; 1-455				1.848 (1.254-2.723)
Chemoimmuno	202; 35-1403				Ref
Immunosignature		<b>0.024</b>	<b>0.029</b>	0.905	
Cold	228; 32-988				0.662 (0.457-0.958)
Hot	60; 1-1403				Ref
PD-L1 (RNAseq)			0.961		1.007 (0.749-1.355)
PD1 (RNAseq)			<b>0.001</b>	<b>0.005</b>	1.381 (1.138-1.676)
CD8a (RNAseq)			0.082	0.163	1.197 (0.977-1.467)
PD-L1 (RNAcope)		<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.002</b>	

	0	179				0.389 (0.044-3.418)
	1	273; 180-988				0.058 (0.013-0.250)
	2	202; 98-1403				0.059 (0.011-0.306)
	3	35; 1-95				1.879 (0.593-5.952)
	4	36; 1-196				Ref
PD1 (RNAscope)			<b>0.010</b>	<b>0.019</b>	0.239	
	0	179; 20-493				0.306 (0.097-0.964)
	1	288; 35-1403				0.165 (0.051-0.534)
	2	69; 1-455				0.555 (0.190-1.618)
	3	37; 1-196				Ref
CD8a (RNAscope)			0.182	0.227	0.138	
	0	250; 250-273				0.223 (0.028-1.761)
	1	98; 1-1403				0.199 (0.036-1.095)
	2	196; 32-988				0.271 (0.054-1.372)
	3	35; 1-455				0.496 (0.100-2.464)
	4	36; 36-60				Ref
Ki67 (%)				<b>&lt;0.001</b>	0.877	1.037 (1.020-1.054)
TILs			0.597	0.618		
	5	250; 1-1403				0.721 (0.088-5.930)
	15	196; 20-493				1.113 (0.128-9.671)
	25	95; 1-988				1.326 (0.166-10.609)
	40	36; 24-455				1.608 (0.193-13.415)
	50	202				Ref

**Table S3. Median LSS and survival analysis**

	LSS (days) (median; range)	p-value			Hazard ratio (95% CI)
		Log-rank test	Cox univariate	Cox multivariate	
Breed		1.000	1.000		
Pure	237; 22-1403				1.000 (0.421-2.377)
Mixed	82; 50-989				Ref
Sex		0.066	0.096	0.058	
Female	188; 50-1403				0.211 (0.047-0.949)
Spayed female	288; 41-645				0.390 (0.104-1.457)
Male	544; 23-1153				0.196 (0.050-0.768)
Neutered male	28; 22-267				Ref
Age		0.577	0.578		
<7 years	237; 22-1403				Ref
≥7 years	228; 28-1153				1.234 (0.589-2.584)
Weight		0.760	0.760		
<10kg	82; 23-989				Ref
≥10kg	237; 22-1403				0.932 (0.593-1.464)
Stage		0.451	0.458		
III	87; 87-388				1.475 (0.331-6.565)
IV	267; 28-585				1.699 (0.728-3.966)
V	228; 22-1403				Ref
Sustage		0.313	0.317		
a	278; 22-1403				0.806 (0.529-1.299)
b	188; 23-669				Ref

Bone marrow Infiltrated Not infiltrated	71; 22-767 237; 23-1403	0.812	0.812		Ref 0.951 (0.629-1.437)
Blood infiltration (%)			0.617		0.993 (0.964-1.022)
Bone marrow infiltration (%)			0.218	0.077	1.020 (0.988-1.054)
CD8+ cells (flow cytometry, %)			0.437		1.039 (0.943-1.144)
LDH activity Normal Increased	178; 23-1153 267; 22-1403	0.940	0.940		Ref 1.014 (0.705-1.460)
Pretreatment with steroids Yes No	178; 23-669 267; 22-1403	0.350	0.353		Ref 0.827 (0.553-1.235)
Treatment Chemo Chemoimmuno	60; 22-989 330; 50-1403	<b>0.002</b>	<b>0.004</b>	<b>0.022</b>	1.776 (1.207-2.613) Ref
Immunosignature Cold Hot	544; 60-1153 87; 22-1403	<b>0.010</b>	<b>0.012</b>	0.710	0.615 (0.420-0.898) Ref
PD-L1 (RNAseq)			0.789		1.044 (0.762-1.430)
PD1 (RNAseq)			<b>0.001</b>	0.182	1.356 (1.134-1.623)
CD8a (RNAseq)			<b>0.035</b>	0.135	1.241 (1.015-1.517)
PD-L1 (RNAscope) 0 1 2 3 4	228 544; 302-1153 645; 178-1403 71; 22-278 50; 23-237	<b>&lt;0.001</b>	<b>0.002</b>	<b>0.002</b>	0.380 (0.044-3.270) 0.034 (0.006-0.191) 0.027 (0.004-0.195) 0.668 (0.235-1.901) Ref
PD1 (RNAscope) 0 1 2 3	228; 35-669 356; 63-1403 71; 22-989 82; 23-267	<b>0.026</b>	<b>0.040</b>	0.076	0.340 (0.108-1.071) 0.191 (0.061-0.600) 0.459 (0.149-1.411) Ref
CD8a (RNAscope) 0 1 2 3 4	302; 302-669 228; 22-1403 330; 60-1153 82; 23-989 50; 50-90	0.235	0.283	0.128	0.199 (0.026-1.549) 0.220 (0.041-1.173) 0.240 (0.048-1.210) 0.432 (0.088-2.128) Ref
Ki67 (%)			<b>&lt;0.001</b>	0.102	1.047 (1.027-1.067)
TILs 5 15 25 40 50	302; 22-1403 237; 35-585 188; 23-1153 94; 28-989 388	0.670	0.682		0.838 (0.102-6.878) 1.645 (0.190-14.219) 1.408 (0.174-11.430) 1.666 (0.200-13.865) Ref