

Table Components of Supplementary Figures:

Figure S1.a: a) Descriptive Statistics of Immune Cell Densities in STS (Figure 2a)

	Immune Cell Density (cells/mm ²)			Paired Comparisons via Mann-Whitney t-test		
	UPS	ERMS	ARMS	UPS vs ERMS	UPS vs ARMS	ERMS vs ARMS
Marker	Mean Density ±SD	Mean Density ±SD	Mean Density ±SD	p-value	p-value	p-value
CD3	247.9±322.7	231.4±209.7	294.2±442.2	0.846	0.245	0.289
CD8	165.9±188.7	64.27 ±46.1	139.5 ±227.6	0.0576	0.138	0.8443
Foxp3	41.65±42.4	84.65 ±182.2	60.58 ±97.67	0.5625	0.4072	0.3951
CD163	1236±851.8	580.9 ±354.5	385.4 ±263.4	0.0002	<0.0001	0.022

Figure S3.a: Subpopulation Frequencies of CD4⁺ Cells

Markers	Frequency from CD4 ⁺ /Foxp3 ⁺	Frequency from CD4 ⁺ /Foxp3 ⁻
	Mean ±SD	Mean ±SD
IFN γ	11.8% ±18.6%	42.4% ±22.5%
IL-10 ⁺	8.0% ±13.1%	2.6% ±2.5%
PD-1 ⁺	76.2% ±26.7%	64.5% ±28.4%
PD-1 ⁺ /TIM-3 ⁺	25.9% ±22.4%	5.2% ±4.7%
PD-1 ⁺ /LAG-3 ⁺	1.3% ±1.5%	3.5% ±3.5%

Figure S3.b: Subpopulation Frequencies of CD8⁺ Cells

	Frequency from CD8⁺/PD-1⁺	Frequency from CD8⁺/PD-1⁻
Markers	Mean ±SD	Mean ±SD
IFNγ	57.3% ±24.4%	57.5% ±22.6%
IL-10⁺	2.1% ±3.3%	2.2% ±1.6%
TIM-3⁺	15.8% ±20.0%	4.6% ±7.1%
LAG-3⁺	3.7% ±5.6%	5.4% ±6.3%

Figure S4: Demographics and Clinical Information of LMS Cases

		LMS
		N=11
Age (years)	Mean	63
	Range	31-80
Gender	M	1 (9%)
	F	10 (91%)
Treatment History	No Systemic Treatment	4 (36%)
	Chemotherapy	3 (27%)
	Chemotherapy + Radiation Therapy	1 (9%)
	Radiation Therapy	3 (27%)
Sample Type	Primary Tumor	9 (82%)
	Metastatic Lesion	2 (18%)

Figure S5.b: Relative CIBERSORT Fraction Score Means of LMS and UPS with Standard Deviation and Corresponding P-values Calculated via 2way ANOVA

	LMS	UPS	LMS vs UPS
	Mean± SD	Mean±SD	p value
B cells naive	0.019 ± 0.030	0.012 ± 0.019	>0.9999
B cells memory	0.003 ± 0.009	0.001 ± 0.003	>0.9999
Plasma cells	0.011 ± 0.031	0.003 ± 0.008	>0.9999
T cells CD8	0.019 ± 0.041	0.056 ± 0.092	0.156
T cells CD4 naive	0.026 ± 0.054	0.014 ± 0.063	>0.9999
T cells CD4 memory resting	0.200 ± 0.065	0.174 ± 0.084	0.729
T cells CD4 memory activated	0.002 ± 0.009	0.002 ± 0.010	>0.9999
T cells follicular helper	0.033 ± 0.038	0.027 ± 0.040	>0.9999
T cells regulatory (Tregs)	0.013 ± 0.019	0.014 ± 0.017	>0.9999
T cells gamma delta	0.000 ± 0.001	0.000 ± 0.001	>0.9999
NK cells resting	0.054 ± 0.046	0.027 ± 0.036	0.679
NK cells activated	0.016 ± 0.023	0.016 ± 0.031	>0.9999
Monocytes	0.042 ± 0.031	0.029 ± 0.031	>0.9999
Macrophages M0	0.096 ± 0.112	0.152 ± 0.183	0.001
Macrophages M1	0.032 ± 0.040	0.043 ± 0.057	>0.9999
Macrophages M2	0.303 ± 0.139	0.355 ± 0.145	0.004
Dendritic cells resting	0.001 ± 0.004	0.001 ± 0.003	>0.9999
Dendritic cells activated	0.015 ± 0.044	0.011 ± 0.038	>0.9999
Mast cells resting	0.102 ± 0.098	0.060 ± 0.049	0.048
Mast cells activated	0.007 ± 0.022	0.000 ± 0.000	>0.9999
Eosinophils	0.000 ± 0.001	0.000 ± 0.002	>0.9999
Neutrophils	0.005 ± 0.021	0.001 ± 0.003	>0.9999

Highlighted cells are statistically significant with p values < 0.005.

Abbreviations: SD = Standard Deviation; LMS: Leiomyosarcoma; UPS: Undifferentiated Pleomorphic Sarcoma.