

Metal	Marker			Surface or Internal
89Y	CD45	DVS-Fluidigm	3089003B	S
111Cd	p16	Abcam	ab54210 (100 uL)	I
112Cd	Trx	Proteintech	14999-1-AP (150 uL)	I
114Cd	p-jak2	Abcam	ab219728	I
115In	CD57	BioLegend	322325	S
116Cd	TET2	Invitrogen	MA5-38640	I
141Pr	phospho-P90RSK(S380)	ABclonal	AP0562	I
142Nd	Caspase 3, cleaved	DVS-Fluidigm	3142004A	I
146Nd	CD8a	BioLegend	301002	S
147Sm	TOP2b	R&D	MAB6348 (100 ug)	I
148Nd	CD27	BioLegend	124202	S
149Sm	p53	BD	554294	I
150Nd	CD11c	BioLegend	337221	S
151Eu	CD123	BD	554527	S
152Sm	jak2	US Biological	37177	I
153Eu	CD4	BioLegend	357402	S
154Sm	T-bet	BioLegend	644825	S
155Gd	CD25	BD	555430	S
156Gd	TIM-3	BioLegend	345002	S
158Gd	CD33	DVS-Fluidigm	3158001B	S
159Tb	P90RSK	StressMarq	SPC-147F	I
160Gd	CD14	BioLegend	301802	S
162Dy	CD56	BD	559043	S
163Dy	CD45RA	BioLegend	304102	S
164Dy	Tyro3	Novus	NBP1-28635 (0.1 mL)	I
165Ho	CD19	DVS-Fluidigm	3165025B	S
166Er	CD41	BioLegend	303702	S
167Er	CD38	BioLegend	303502	S
168Er	Ki67	BD	556003	I
169Tm	CD279, PD-1	Miltenyi	130-096-168	S
170Er	DNMT3A	Novus	NB120-13888 (0.1mg)	I
171Yb	CD68	DVS-Fluidigm	3171011B	I
173Yb	CD11b	BioLegend	301302	S
174Yb	HLA-DR 174Yb (MDA)	BioLegend	307602	S
175Lu	CD3	BioLegend	300443	S
176Yb	CD127, IL-7Ra	DVS-Fluidigm	3176004B	S
209Bi	CD16	DVS-Fluidigm	3209002B	S
191Ir	Ir DNA-Intercalator	DVS-Fluidigm	201192A	nucleus
193Ir	Ir DNA-Intercalator	DVS-Fluidigm	201192A	nucleus
103Rh	Rh DNA-intercalator	DVS-Fluidigm	201103A	Viable cells

Table S1

	n	Mean (SD)
Sex		
Male	16	100%
Female	0	0%
Diagnosis		
Esophagus cancer	14	87.50%
SCLC	2	14.30%
Age	16	65.00 (8.48)
RT modality		
Proton	3	18.8%
VMAT	11	68.8%
3-D	1	6.3%
IMRT	1	6.3%
RT total dose	16	53.20 (6.30)
RT fraction dose	16	1.88 (0.20)
RT fraction	16	28.25 (0.68)
Neutrophils number (K/ μ l)		
Pre-RT	16	5.13 (1.92)
End-RT	16	3.78 (1.73)*
Lymphocytes number (K/ μ l)		
Pre-RT	16	1.76 (0.48)
End-RT	16	0.32 (0.13)**
Monocytes (K/ μ l)		
Pre-RT	16	0.72 (0.20)
End-RT	16	0.67 (0.32)
Eosinophils (K/ μ l)		
Pre-RT	16	0.19 (0.11)
End-RT	16	0.12 (0.13)
Basophils (K/ μ l)		
Pre-RT	16	0.05 (0.02)
End-RT	16	0.03 (0.02)
Risk factor of CVD		
Hypertension	9	56.3%
Hyperlipidemia	10	62.5%
Diabetes	5	31.3%
Obesity (BMI>30kg/m ²)	5	31.3%
Past history of CVD	6	37.5%

Table S2

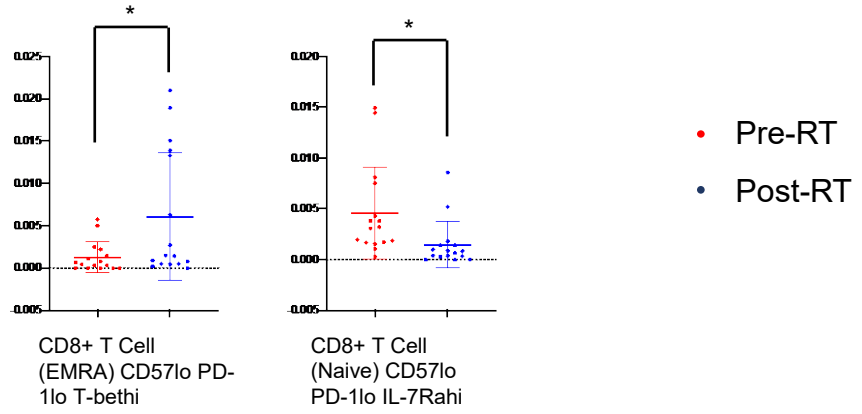
Compartment	Cell subset	Description
T cell	NKT cell	CD3+CD19-CD33-CD41-CD56+
T cell	CD8+T cell (Naïve)	CD3+CD19-CD33-CD41-CD56-, CD4-CD8a+, CD45RA+, CD27+
T cell	CD8+ T cell (EMRA)	CD3+CD19-CD33-CD41-CD56-, CD4-CD8a+, CD45RA+, CD27-
T cell	CD8+ T cell (Effector Memory)	CD3+CD19-CD33-CD41-CD56-, CD4-CD8a+, CD45RA-, CD27-
T cell	CD8+ T cell (Central Memory)	CD3+CD19-CD33-CD41-CD56-, CD4-CD8a+, CD45RA-, CD27+
T cell	CD4+T cell (Naïve)	CD3+CD19-CD33-CD41-CD56-, CD4+CD8a-, CD45RA+, CD27+
T cell	CD4+T cell (EMRA)	CD3+CD19-CD33-CD41-CD56-, CD4+CD8a-, CD45RA+, CD27-
T cell	CD4+T cell (Effector Memory)	CD3+CD19-CD33-CD41-CD56-, CD4+CD8a-, CD45RA-, CD27-
T cell	CD4+T cell (Central Memory)	CD3+CD19-CD33-CD41-CD56-, CD4+CD8a-, CD45RA-, CD27+
T cell	CD4+CD8+ T cell	CD3+CD19-CD33-CD41-CD56-, CD4+CD8a+
T cell	CD4-CD8- T cell	CD3+CD19-CD33-CD41-CD56-, CD4-CD8a-
Other	CM- HLADR+	CD3-CD19-CD33-CD41-CD56-, CD123- HLA DR+
Other	CD41+	CD3-CD19-CD33-CD41+CD56-
NK cell	NK Cell (CD56+ CD16+)	CD3-CD19-CD33-CD41-CD56+, CD16+
NK cell	NK Cell (CD56+ CD16-)	CD3-CD19-CD33-CD41-CD56+, CD16-
Myeloid	Monocyte (CD14+ CD16+)	CD3-CD19-CD33+CD41-, CD14+, CD16+
Myeloid	Monocyte (CD14+ CD16-)	CD3-CD19-CD33+CD41-, CD14+, CD16-
Myeloid	Monocyte (CD14- CD16+)	CD3-CD19-CD33+CD41-, CD14-, CD16+
Myeloid	Dendritic Cell (Plasmacytoid)	CD3-CD19-CD33-CD41-CD56-, CD11c-CD123+HLA DR+
Myeloid	Dendritic Cell (Conventional)	CD3-CD19-CD33+CD41-, CD14-, CD16-
Granulocyte	Granulocyte (Basophil)	CD3-CD19-CD33-CD41-CD56-, CD123+HLA DR-
B cell	B cell (Plasmablast)	CD3-CD19+CD33-CD41-CD56-, CD27+ CD38+
B cell	B cell (Memory)	CD3-CD19+CD33-CD41-CD56-, CD27+, CD38-
B cell	B cell (CD27-)	CD3-CD19+CD33-CD41-CD56-, CD27-

Table S3

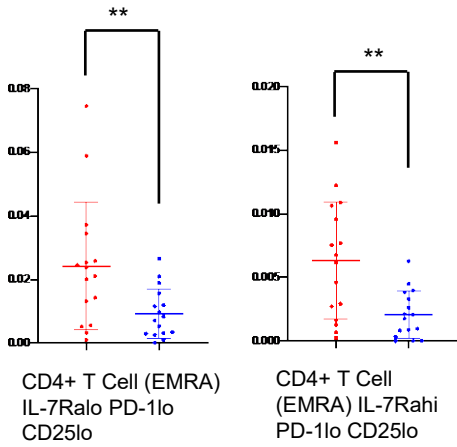
Figure S1



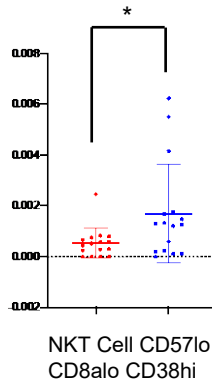
A. CD8+ T cell



B. CD4+ T cells



C.



D.

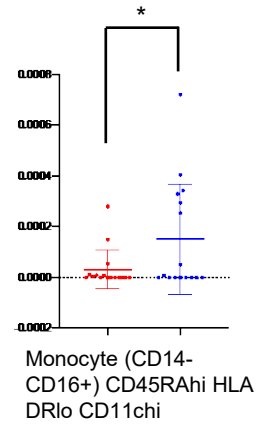


Figure S2

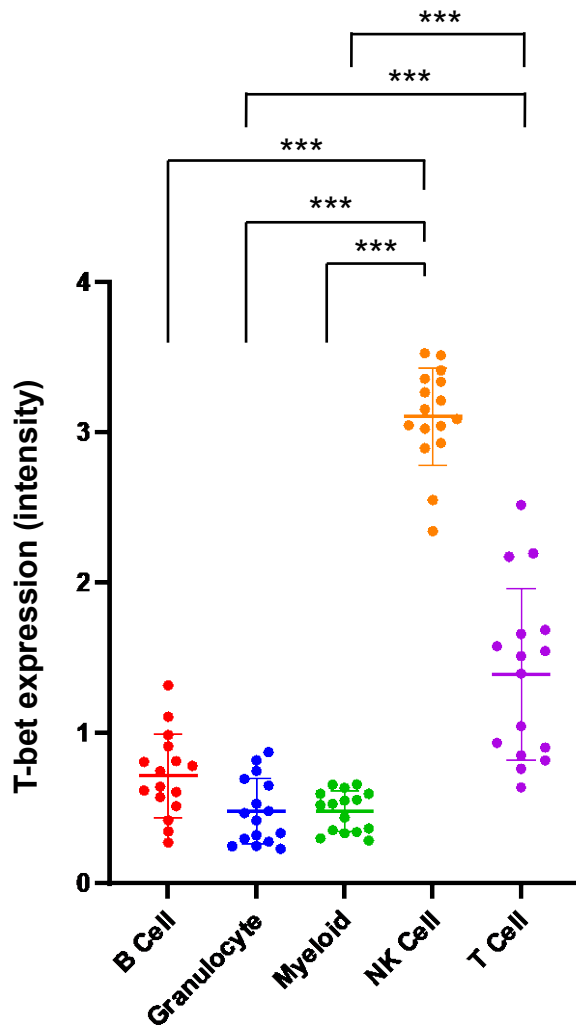


Figure S3