

## SUPPLEMENTARY TABLES

**Supplementary Table 1. Reference ranges of the percentages of T cells, B cells, and NK cells in different age groups.**

Parameters		All	Children	Adolescents	Adults	Elders	p
		N=261	N=47	N=72	N=90	N=52	
Age	Mean±SD	33.68±26.63	3.81±1.04	10.81±3.74	46±13.79	71.04±4.39	
	(Range)	(1-82)	(1-5)	(6-18)	(18-65)	(66-82)	
Sex	Male: Female	168:93	35:12	52:20	53:37	28:24	
T cell number	Mean±SD	1559±688	2378±733	1845±515	1173±363	1092±314	<0.001
	(2.5%-97.5%)	(612-3313)	(1214-3832)	(1077-3035)	(681-2021)	(589-1712)	
T cells (%)	Mean±SD	66.71±7.81	67.68±6.24	69.19±5.5.98	67.62±7.28	60.82±9.18	<0.001
	(2.5%-97.5%)	(47.74-80.22)	(56.62-78.24)	(57.84-80.08)	(51.55-81.59)	(44.50-76.68)	
B cells (%)	Mean±SD	14.44±6.29	20.45±6.2	17.18±4.69	10.65±3.69	11.76±5.9	<0.001
	(2.5%-97.5%)	(4.5-29.32)	(10.33-34.30)	(9.71-26.50)	(3.83-17.60)	(4.33-26.47)	
NK cells (%)	Mean±SD	17.93±9.85	10.69±5.95	12.71±6.57	20.9±7.42	26.54±11.22	<0.001
	(2.5%-97.5%)	(3.99-40.72)	(3.51-21.51)	(3.92-26.58)	(9.6-37.97)	(8.73-47.73)	
CD4 <sup>+</sup> T cells (%)	Mean±SD	36.39±6.9	36.13±6	34.92±6.18	37.56±7.32	36.61±7.45	<0.05
	(2.5%-97.5%)	(23.18-49.33)	(25.56-45.85)	(23.59-49.08)	(24.82-51.33)	(22.27-49.13)	
CD8 <sup>+</sup> T cells (%)	Mean±SD	24.33±6.71	24.77±5.05	27.18±5.55	24.45±6.63	19.78±7.22	<0.001
	(2.5%-97.5%)	(11.72-38.46)	(16.69-33.93)	(18.31-38.41)	(13.88-38.73)	(8.16-35.13)	

SD: standard deviation. P means association between different parameters and age in all participants by using Spearman's rank correlation test.

**Supplementary Table 2. Reference ranges of lymphocyte number, function, and phenotype in different gender groups.**

Parameters		all	Male	Female	P
		N=261	N=168	N=93	
T cell number	Mean±SD (2.5%-97.5%)	1559±688 (729-2946)	1589±670 (612-3056)	1505±715 (651-3357)	>0.05
T cells (%)	Mean±SD (2.5%-97.5%)	66.71±7.81 (51.28-77.92)	66.09±7.92 (47.19-78.47)	67.83±7.49 (52.36-82.46)	>0.05
CD4 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	36.39±6.9 (25.36-47.92)	35.13±6.74 (23.68-48.73)	38.65±6.62 (23.93-50.45)	<0.001
CD4 <sup>+</sup> T cell number	Mean±SD (2.5%-97.5%)	836±355 (391-1598)	830±339 (373-1688)	847±383 (379-1892)	>0.05
CD8 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	24.33±6.71 (13.85-35.67)	24.81±6.82 (11.71-38.94)	23.45±6.41 (12.63-35.65)	>0.05
CD8 <sup>+</sup> T cell number	Mean±SD (2.5%-97.5%)	576±310 (190-1132)	604±306 (153-1442)	527±310 (183-1391)	>0.05
B cells (%)	Mean±SD (2.5%-97.5%)	14.44±6.29 (5.94-25.43)	14.65±6.44 (4.36-30.69)	14.06±6.00 (5.57-27.63)	>0.05
B cell number	Mean±SD (2.5%-97.5%)	358±252 (83-867)	369±237 (72-908)	337±276 (76-1143)	>0.05
NK cells (%)	Mean±SD (2.5%-97.5%)	17.93±9.85 (5.16-36.6)	18.32±10.39 (4.02-46.07)	17.21±8.76 (4.11-33.29)	>0.05
NK cell number	Mean±SD (2.5%-97.5%)	383±219 (125-851)	406±229 (105-943)	343±191 (98-740)	<0.05
IFN- $\gamma$ <sup>+</sup> CD4 <sup>+</sup> cells (%)	Mean±SD (2.5%-97.5%)	17.84±8.85 (6.27-34.22)	16.74±8.37 (5.67-34.98)	19.83±9.35 (5.07-38.36)	<0.01
IFN- $\gamma$ <sup>+</sup> CD8 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	46.25±22.43 (14.64-85.51)	43.76±22.17 (13.57-87.56)	50.76±22.20 (13.75-87.72)	<0.05
IFN- $\gamma$ <sup>+</sup> NK cells (%)	Mean±SD (2.5%-97.5%)	72.68±12.65 (49.96-89.57)	72.57±12.26 (44.91-90.71)	72.87±13.34 (42.97-90.87)	>0.05
HLA-DR <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	16.23±7.54 (6.82-31.29)	16.24±7.69 (6.06-34.44)	16.21±7.24 (6.54-33.06)	>0.05
CD28 <sup>+</sup> CD4 <sup>+</sup> T cells(%)	Mean±SD (2.5%-97.5%)	94.95±7.03 (75.97-99.92)	95.22±7.07 (72.25-99.97)	94.44±6.94 (73.95-99.94)	>0.05
HLA-DR <sup>+</sup> CD4 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	14.33±7.45 (5.96-29.07)	14.2±7.42 (5.87-30.90)	14.57±7.50 (4.89-32.89)	>0.05
CD45RO <sup>+</sup> CD4 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	50.89±18.88 (23.29-82.03)	49.53±18.78 (20.13-83.54)	53.35±18.80 (21.59-84.33)	>0.05
CD45RA <sup>+</sup> CD4 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	49.04±18.88 (11.53-79.42)	50.43±18.75 (11.76-79.87)	46.55±18.87 (15.67-78.42)	>0.05
CD28 <sup>+</sup> CD8 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	62.06±17.3 (29.46-86.08)	62.61±17.78 (26.39-89.32)	61.08±16.34 (27.84-88.06)	>0.05
HLA-DR <sup>+</sup> CD8 <sup>+</sup> T cells (%)	Mean±SD (2.5%-97.5%)	34.93±17.12 (12.47-66.36)	34.75±17.24 (9.89-72.99)	35.24±16.90 (11.30-68.72)	>0.05

SD: standard deviation. P means association between different parameters and age in all participants by using Spearman's rank correlation test.

**Supplementary Table 3. The demographic and clinical characteristics of patients.**

<b>Characteristic</b>	<b>Hypoimmune group (n=21)</b>	<b>Hyperimmune group (n=20)</b>
Mean age (mean±SD), years	49±16	58±11
Male: Female	16:5	13:7
Underlying diseases		
malignancy undergoing therapy	8(38.09)	
autoimmune disease receiving treatment	3(14.29)	
transplantation receiving treatment	2(9.52)	
diabetes more than 10 years	3(14.29)	
chronic renal failure	1(4.76)	

SD: standard deviation.