

Supplementary Table 1: Clinical details of patients enrolled in the study.

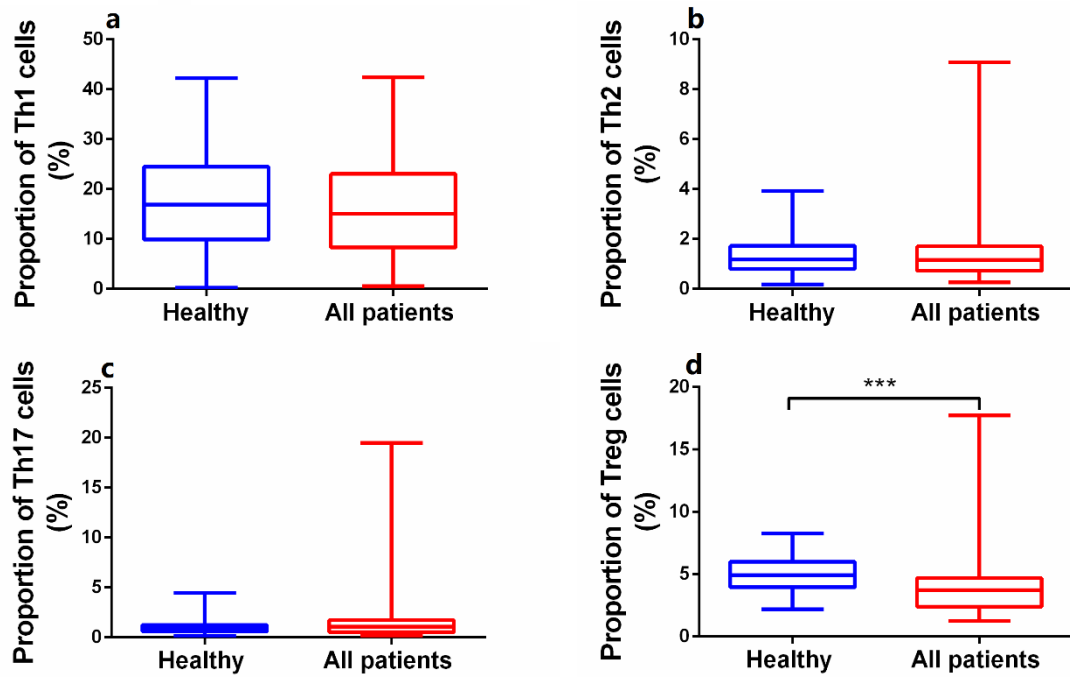
The random number of patients	Group	Gender	Age (years)	Medications	Description of IL-2 related adverse effects
001	Non-IL-2 group	female	45	Biological agents; Methotrexate; Leflunomide; Cyclophosphamide; NSAIDs.	None.
002	Non-IL-2 group	male	35	Biological agents; Methotrexate; NSAIDs.	None.
003	Non-IL-2 group	female	48	Biological agents; Methotrexate; Rapamycin; NSAIDs.	None.
004	IL-2 group	female	52	Biological agents; Methotrexate; NSAIDs.	None.
005	IL-2 group	male	35	Biological agents; Leflunomide; Sulfasalazine; Total Glucosides of Paeony Capsules; NSAIDs.	None.
007	IL-2 group	male	54	Biological agents; Tretinoin tablets; NSAIDs.	None.
008	Non-IL-2 group	male	57	Tretinoin tablets; NSAIDs.	None.
010	Non-IL-2 group	male	50	Biological agents; NSAIDs.	None.
012	Non-IL-2 group	female	42	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
013	Non-IL-2 group	female	24	Biological agents; Total Glucosides of Paeony Capsules.	None.
016	IL-2 group	female	54	Biological agents; Methotrexate; NSAIDs.	None.
018	Non-IL-2 group	female	47	Rapamycin; Total Glucosides of Paeony Capsules; NSAIDs.	None.
022	IL-2 group	male	42	Biological agents; Total Glucosides of Paeony Capsules; NSAIDs.	None.
024	IL-2 group	female	39	Biological agents; NSAIDs.	None.
026	IL-2 group	male	29	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
030	Non-IL-2 group	male	51	Biological agents; Methotrexate; Cyclophosphamide; NSAIDs.	None.
033	Non-IL-2 group	female	46	Biological agents; Rapamycin; Tretinoin tablets; Sulfasalazine; NSAIDs.	None.
035	Non-IL-2 group	female	38	Biological agents; Rapamycin; Tretinoin tablets;	None.
037	Non-IL-2 group	female	28	Biological agents; Rapamycin;	None.

038	Non-IL-2 group	male	43	Biological agents;	None.
039	Non-IL-2 group	male	45	Glucocorticoid; Methotrexate; Leflunomide; Cyclophosphamide;	None.
040	Non-IL-2 group	male	40	Methotrexate; NSAIDs.	None.
042	Non-IL-2 group	male	54	Biological agents; Tretinoin tablets; NSAIDs.	None.
043	IL-2 group	male	62	Biological agents; Total Glucosides of Paeony Capsules.	Skin rash, relief after a week
044	IL-2 group	male	53	Methotrexate; Tretinoin tablets; NSAIDs.	None.
046	Non-IL-2 group	female	42	Biological agents; Methotrexate.	None.
050	Non-IL-2 group	female	25	Leflunomide.	None.
051	Non-IL-2 group	female	38	Biological agents; Rapamycin; NSAIDs.	None.
054	Non-IL-2 group	male	38	Biological agents; Rapamycin; Tretinoin tablets; NSAIDs.	None.
055	IL-2 group	female	43	Biological agents; NSAIDs.	None.
056	IL-2 group	male	23	Biological agents; Thalidomide; Total Glucosides of Paeony Capsules.	None.
057	Non-IL-2 group	male	70	Biological agents; Rapamycin; Tretinoin tablets; NSAIDs.	None.
060	Non-IL-2 group	male	45	Glucocorticoid; Biological agents; Tretinoin tablets; NSAIDs.	None.
062	Non-IL-2 group	female	45	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
064	Non-IL-2 group	male	45	Biological agents; Methotrexate; Cyclophosphamide; NSAIDs.	None.
065	IL-2 group	female	47	Biological agents; Total Glucosides of Paeony Capsules; NSAIDs.	None.
066	Non-IL-2 group	female	53	Rapamycin; Tretinoin tablets; NSAIDs.	None.
067	Non-IL-2 group	male	45	Biological agents; Methotrexate.	None.
068	Non-IL-2 group	female	33	Biological agents; Rapamycin; Tretinoin tablets; NSAIDs.	None.
069	IL-2 group	male	50	Methotrexate; Tretinoin tablets; NSAIDs.	None.
074	Non-IL-2 group	female	43	Glucocorticoid; Biological agents; Methotrexate; Tretinoin tablets; NSAIDs.	None.

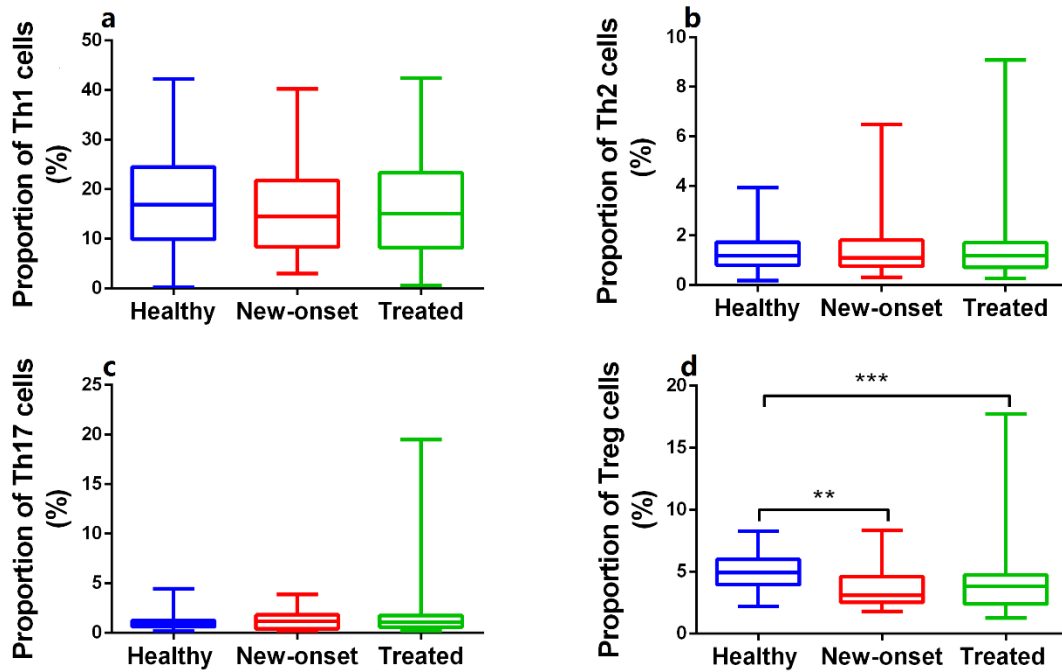
076	Non-IL-2 group	male	37	Biological agents.	None.
078	Non-IL-2 group	female	45	Methotrexate; Rapamycin; Tretinoin tablets.	None.
079	Non-IL-2 group	female	66	Total Glucosides of Paeony Capsules.	None.
081	Non-IL-2 group	female	56	Biological agents; Rapamycin; Tretinoin tablets; NSAIDs.	None.
082	Non-IL-2 group	male	61		None.
083	Non-IL-2 group	male	47	Biological agents;	None.
084	Non-IL-2 group	male	53	Glucocorticoid; Methotrexate; Leflunomide; Cyclophosphamide; NSAIDs.	None.
085	Non-IL-2 group	male	35	Biological agents.	None.
087	IL-2 group	female	32	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
090	Non-IL-2 group	male	50	Methotrexate; Thalidomide; Total Glucosides of Paeony Capsules.	None.
092	IL-2 group	female	37	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
094	Non-IL-2 group	female	52	Glucocorticoid; Thalidomide; NSAIDs.	None.
095	Non-IL-2 group	male	31	Biological agents; Total Glucosides of Paeony Capsules.	None.
098	Non-IL-2 group	female	26	Total Glucosides of Paeony Capsules.	None.
099	Non-IL-2 group	female	58	Methotrexate; NSAIDs.	None.
101	Non-IL-2 group	female	33	Biological agents; Rapamycin; NSAIDs.	None.
102	Non-IL-2 group	female	46	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
103	Non-IL-2 group	female	56	Methotrexate; Leflunomide; Thalidomide; NSAIDs.	None.
104	Non-IL-2 group	male	59	Biological agents; Total Glucosides of Paeony Capsules; NSAIDs.	None.

106	Non-IL-2 group	male	18	Biological agents; Total Glucosides of Paeony Capsules.	None.
109	Non-IL-2 group	female	57	Biological agents; NSAIDs.	None.
110	IL-2 group	female	40	Tretinoin tablets; NSAIDs.	None.
111	IL-2 group	female	36	Biological agents; Tretinoin tablets;	None.
112	Non-IL-2 group	male	52	Biological agents; Leflunomide; Tretinoin tablets; NSAIDs.	None.
114	Non-IL-2 group	female	46	Methotrexate; Sulfasalazine; NSAIDs.	None.
116	Non-IL-2 group	male	23	Biological agents; Leflunomide; NSAIDs.	None.
117	Non-IL-2 group	male	51	Biological agents; Methotrexate; Tretinoin tablets;	None.
118	IL-2 group	female	39	Biological agents.	None.
119	Non-IL-2 group	male	64	Biological agents.	None.
122	IL-2 group	female	52	Tretinoin tablets; Total Glucosides of Paeony Capsules; NSAIDs.	None.
123	Non-IL-2 group	female	37	Biological agents; Rapamycin.	None.
125	Non-IL-2 group	female	24	Biological agents; Tretinoin tablets.	None.
126	Non-IL-2 group	male	47	NSAIDs.	None.
127	Non-IL-2 group	female	55	Glucocorticoid; Biological agents; Methotrexate; Cyclophosphamide; NSAIDs.	None.
129	Non-IL-2 group	male	29	Biological agents; Methotrexate; Tretinoin tablets; NSAIDs.	None.
130	Non-IL-2 group	male	55	Biological agents; Methotrexate.	None.
132	Non-IL-2 group	male	34	Biological agents.	None.
134	Non-IL-2 group	female	29	NSAIDs.	None.
135	IL-2 group	male	53	Biological agents; Tretinoin tablets; Total Glucosides of Paeony Capsules.	None.
139	IL-2 group	male	61	Glucocorticoid; Biological agents; Methotrexate; Total Glucosides of Paeony Capsules; NSAIDs.	None.

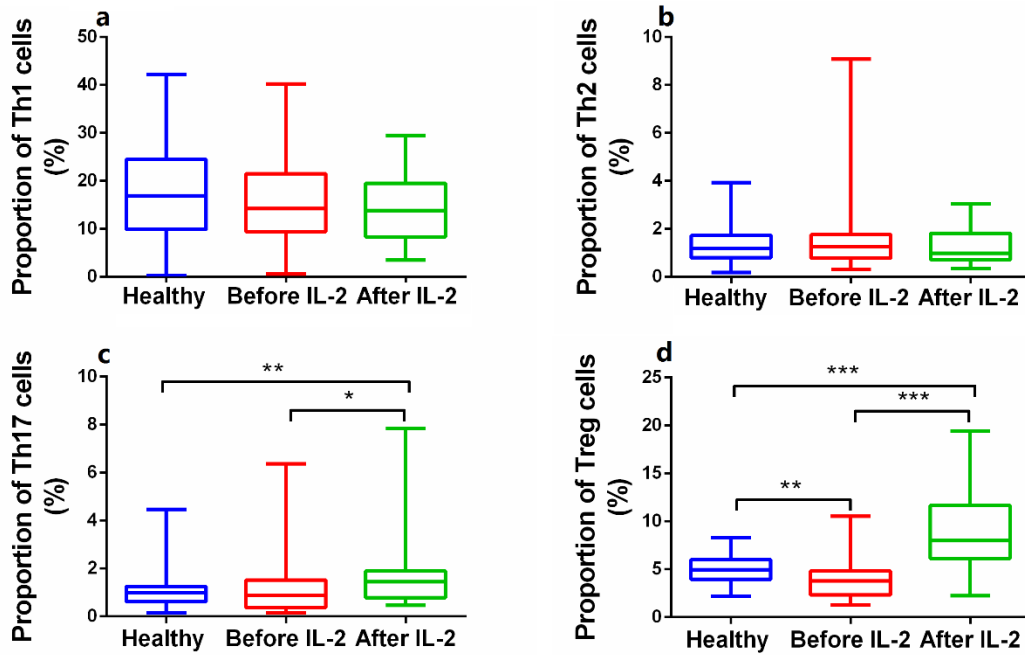
140	Non-IL-2 group	male	51	Biological agents; Methotrexate; Cyclophosphamide; NSAIDs.	None.
142	Non-IL-2 group	female	56	Biological agents; Methotrexate; Sulfasalazine; NSAIDs.	None.
143	IL-2 group	female	62	Biological agents; Methotrexate; Tretinoin tablets.	None.
144	Non-IL-2 group	female	33	Tretinoin tablets.	None.
145	Non-IL-2 group	male	63	Leflunomide; Cyclophosphamide; Rapamycin; NSAIDs.	None.
146	Non-IL-2 group	female	26	Biological agents; Tretinoin tablets.	None.
148	Non-IL-2 group	male	50	Biological agents; Methotrexate; NSAIDs.	None.
149	Non-IL-2 group	female	52	Tretinoin tablets; NSAIDs.	None.
150	Non-IL-2 group	female	57	NSAIDs.	None.
151	Non-IL-2 group	male	57	Biological agents; Rapamycin; NSAIDs.	None.
153	Non-IL-2 group	female	58	Tretinoin tablets; NSAIDs.	None.
154	Non-IL-2 group	male	54	Biological agents; NSAIDs.	None.
157	Non-IL-2 group	female	55	Biological agents; Methotrexate; Leflunomide; NSAIDs.	None.
158	Non-IL-2 group	female	22	Biological agents; Rapamycin; Sulfasalazine.	None.



Supplementary Figure 1: Comparison of percentage of peripheral CD4⁺T subsets between PsA patients (n=95) and healthy controls (n=106). (a, b, and c) No statistically significant difference in the proportion of Th1, Th2 and Th17 between patients and healthy controls. (d) The proportion of Tregs was significantly reduced in patients with PsA. Data were calculated and compared with Mann-Whitney *U* test and were presented as median (range). ****P* < 0.001. Asymptotic significances (2-sided tests) were displayed. The significance level was *P* < 0.05.



Supplementary Figure 2: The differences of proportion of CD4⁺T subgroups between PsA patients (including new onset and treated) and healthy controls. (a, b, and c) Proportion of Th1, Th2, and Th17 cells in PB were not significantly different among the healthy controls (n=106), new onset (n=21) and treated patients (n=74). (d) The percentage of Tregs in PB was lower in PsA patients (including new and treated) than healthy controls, while there was no statistical difference between new-onset and treated patients in that. Data were presented as median (range). Statistical analysis was performed using the Independent-Samples Kruskal-Wallis H test. ** $P < 0.01$, *** $P < 0.001$. Asymptotic significances (2-sided tests) were displayed. The significance level was $P < 0.05$.



Supplementary Figure 3: Efficacy of short-term and low-dose IL-2 treatment in regulating percentages of CD4+T subsets. (a, b) Proportions of Th1, Th2 in PB were no statistical difference between the baseline and after IL-2 treatment. (c and d) Percentages of Th17 and Treg cells in PB, especially Tregs, were significantly increased in patients after IL-2 treatment. Within-group comparisons were made using the Wilcoxon test before (blue) and after (red) IL-2 therapy. * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. Asymptotic significances (2-sided tests) were displayed. The significance level was $P < 0.05$.