

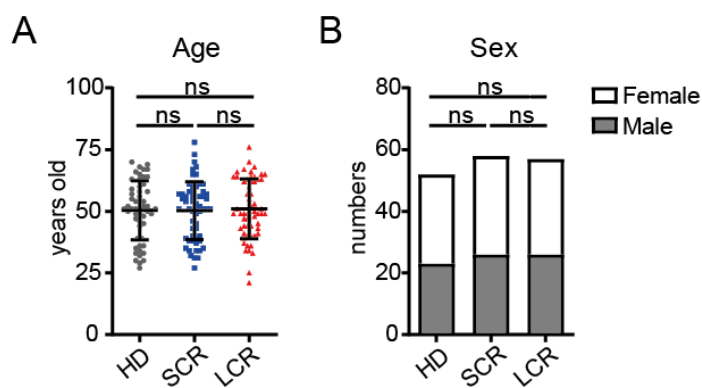
## Electronic Supplementary Material

### Alterations in Phenotypes and Responses of T Cells within 6 Months of Recovery from COVID-19: A Cohort Study

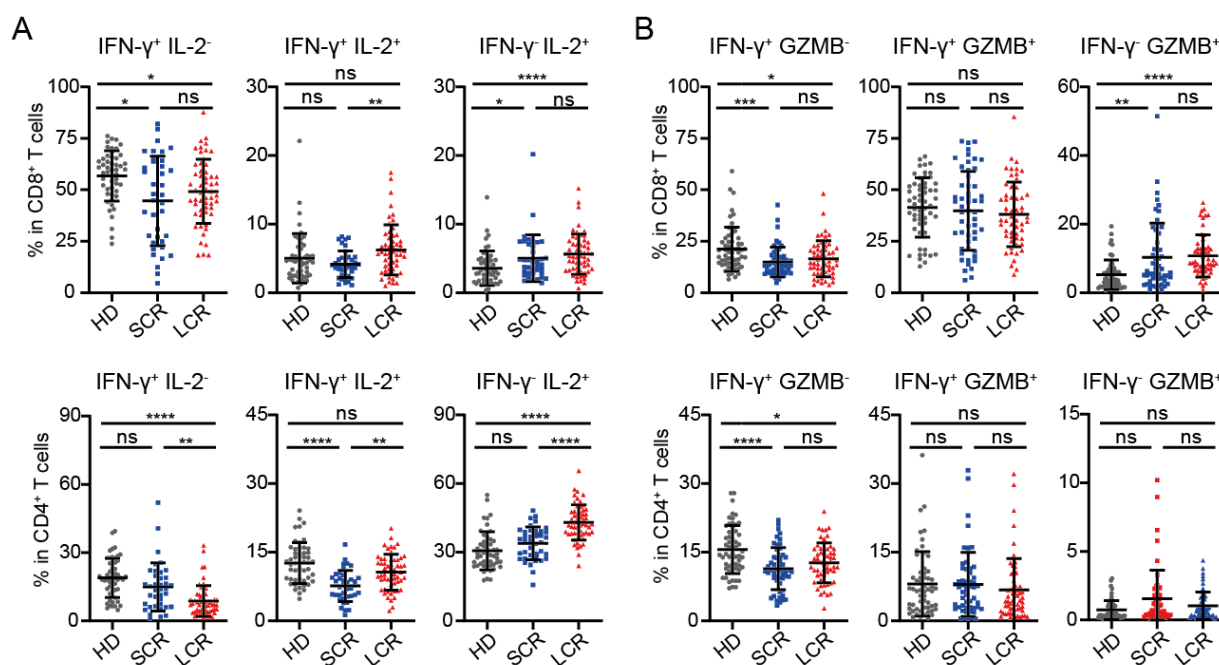
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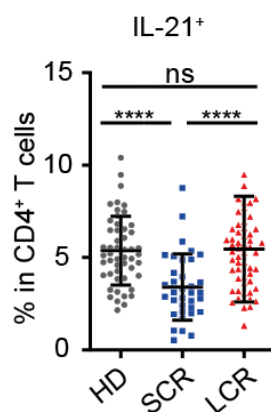
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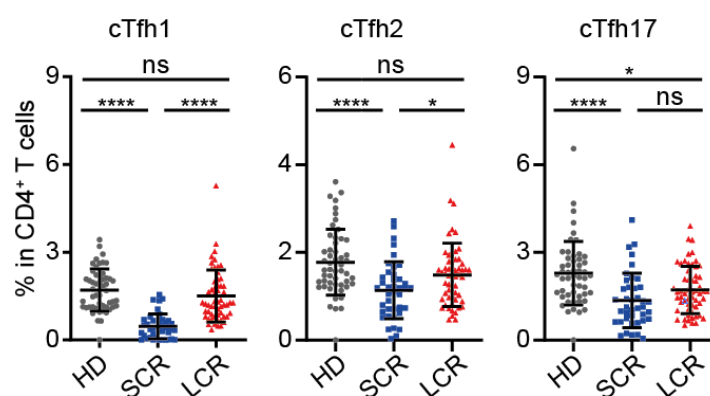
**Fig. S1** Age and sex distribution of HD, SCR and LCR cohorts. In Fig. S1A, results are expressed as mean  $\pm$  S.D., statistical difference was calculated with one-way ANOVA. In addition, a chi-square test was used to analyze the difference in sex distribution of each cohort in Fig. S1B. ns, non-significant.



**Fig. S2** Co-expression of INF- $\gamma$  and IL-2, or INF- $\gamma$  and granzyme B on CD8<sup>+</sup> T or CD4<sup>+</sup> T cells in PBMCs of HD, SCR and LCR cohorts. PBMCs were stimulated with PMA and ionomycin for 4.5 h in the presence of BFA and monensin. After surface staining, PBMCs were intracellularly stained with mAbs specific to INF- $\gamma$ , IL-2 and granzyme B and then analyzed by flow cytometry. **A** Co-expression of INF- $\gamma$  and IL-2 on CD8<sup>+</sup> T or CD4<sup>+</sup> T cells. **B** Co-expression of INF- $\gamma$  and granzyme B on CD8<sup>+</sup> T or CD4<sup>+</sup> T cells. Results are shown as mean  $\pm$  S.D. One-way ANOVA was used to analyze the statistical difference. ns, non-significant; \*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ; \*\*\*,  $P < 0.001$ ; \*\*\*\*,  $P < 0.0001$ .



**Fig. S3** Frequency of IL-21<sup>+</sup> cells in CD4<sup>+</sup> T cells of PBMCs in HD, SCR and LCR cohorts. PBMCs were stimulated with PMA and ionomycin for 4.5 h in the presence of BFA and monensin, frequencies of IL-21<sup>+</sup> CD4<sup>+</sup> T cells were displayed. One-way ANOVA was used to analyze the statistical difference. ns, non-significant; \*\*\*\*,  $P < 0.0001$ .



**Fig. S4** Categorical subsets of circulating Tfh (cTfh) cells in CD4<sup>+</sup> T cells in PBMCs of HD, SCR and LCR cohorts. Frequencies of CXCR3<sup>+</sup> CCR6<sup>-</sup> cells (cTfh1), CXCR3<sup>-</sup> CCR6<sup>-</sup> cells (cTfh2) and CXCR3<sup>-</sup> CCR6<sup>+</sup> cells (cTfh17) in CD4<sup>+</sup> T cells were shown. Results are shown as mean  $\pm$  S.D. One-way ANOVA was used to analyze the statistical difference. ns, non-significant; \*,  $P < 0.05$ ; \*\*\*\*,  $P < 0.0001$ .