Figure S1. Immunofluorescence analysis was performed to detect the protein localization of IDO1 in lung adenocarcinoma cells at different times after 8 Gy irradiation. Scale bar, 10 μm. CON, control; IDO1, indoleamine-2,3-dioxygenase 1; RT, radiotherapy.

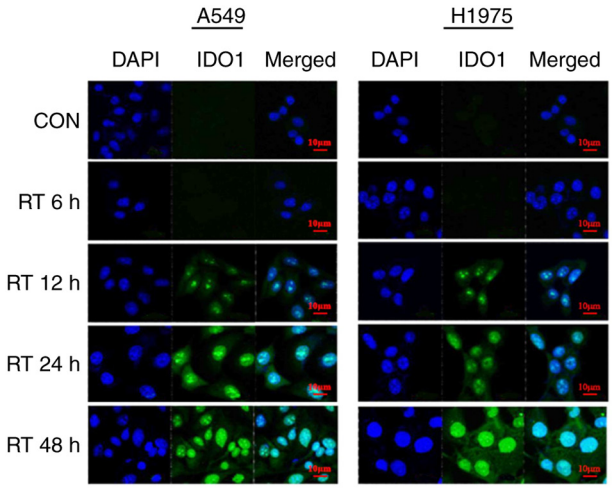

Figure S2. Representative flow cytometry plots of apoptosis distribution shown in Fig. 1F. IDO1, indoleamine-2,3-dioxygenase 1; RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA.

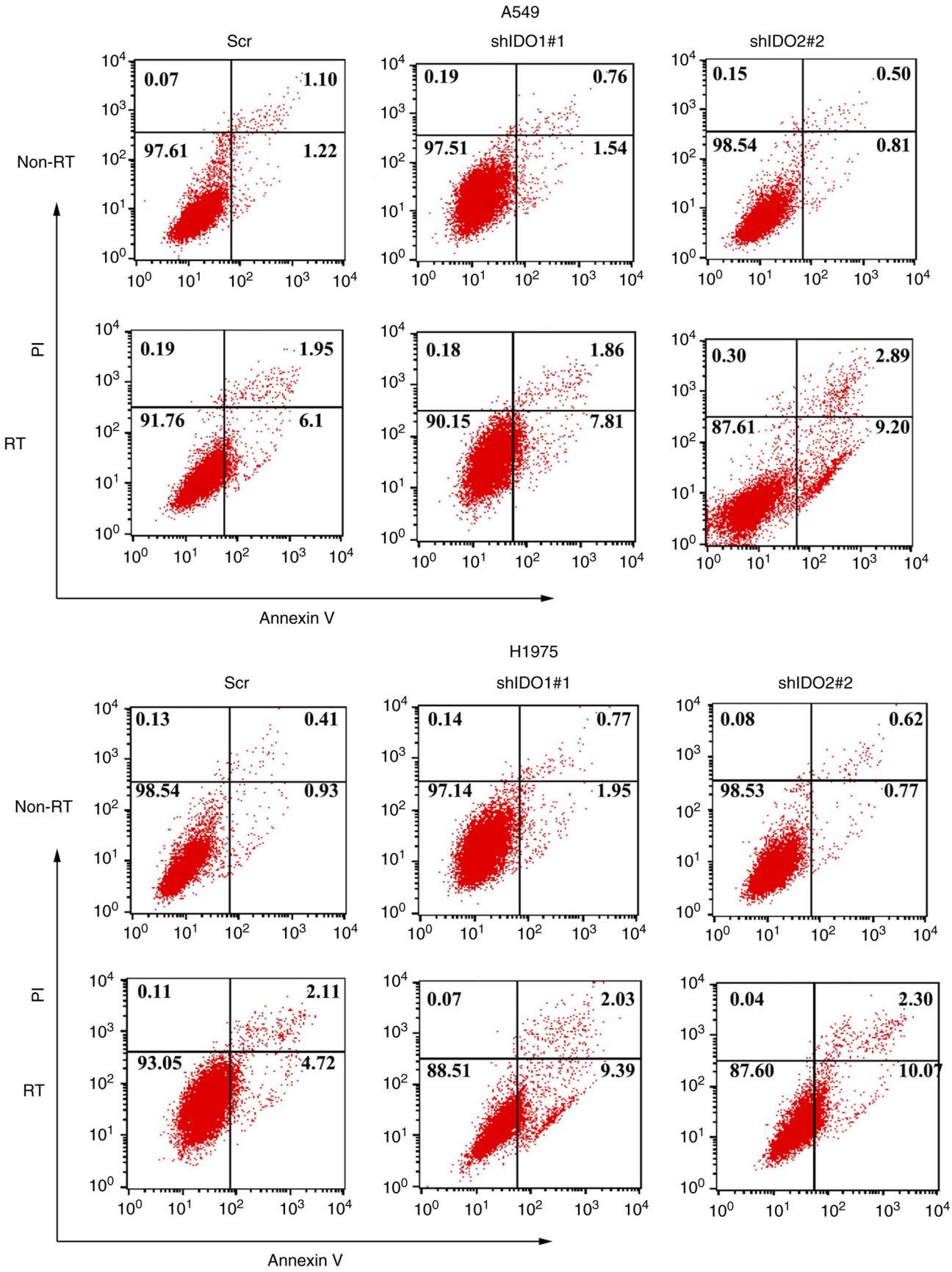

Figure S3. Representative flow cytometry plots of apoptosis distribution shown in Fig. 2A and B. (A) H1975 cells were co-cultured with Jurkat T cells and then exposed to 8 Gy radiation. Subsequently, the apoptotic rate of extracted Jurkat T cells was detected by flow cytometry. (B) Flow cytometry was used to detect the effect of shIDO1 + RT for 48 h on the apoptosis of Jurkat T cells. IDO1, indoleamine-2,3-dioxygenase 1; EPA, epacadostat; RT, radiotherapy; Scr, scrambled shRNA; sh, short hairpin RNA.

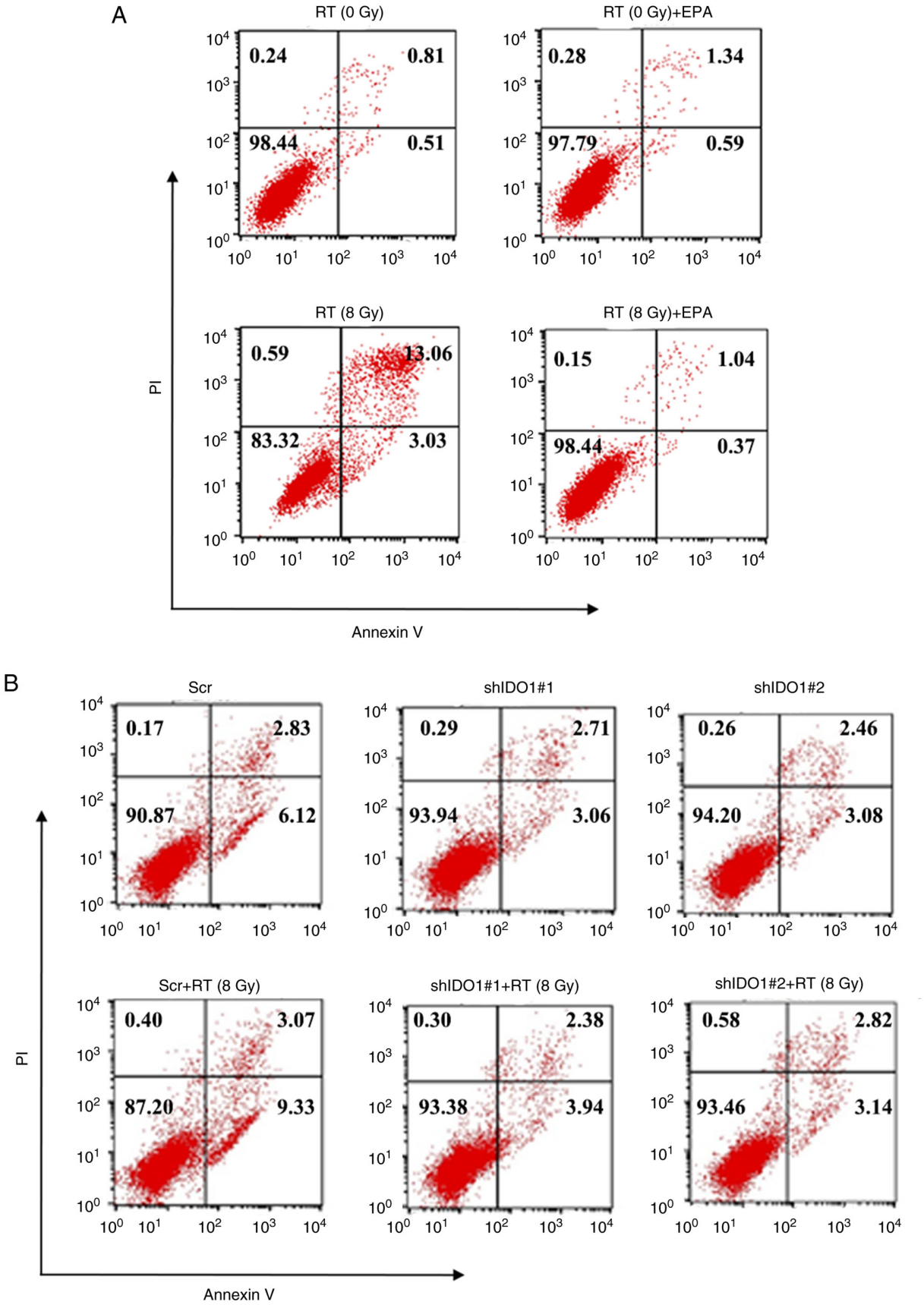

Figure S4. Representative flow cytometry plotsof cell cycle progression shown in Fig. 3B. RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA.

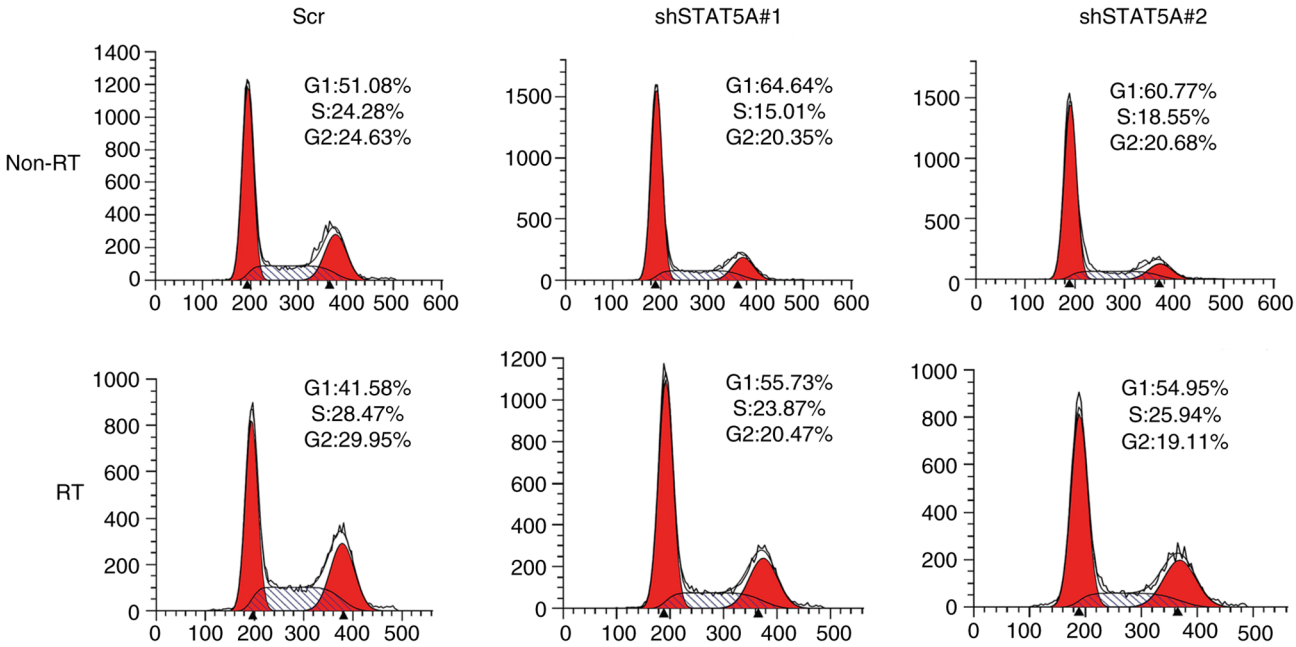

Figure S5. Representative flow cytometry plots of apoptosis distribution shown in Fig. 3C. Apoptosis was assessed by flow cytometry in (A) A549 and (B) H1975 transfected with shSTAT5A with or without RT.RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA.

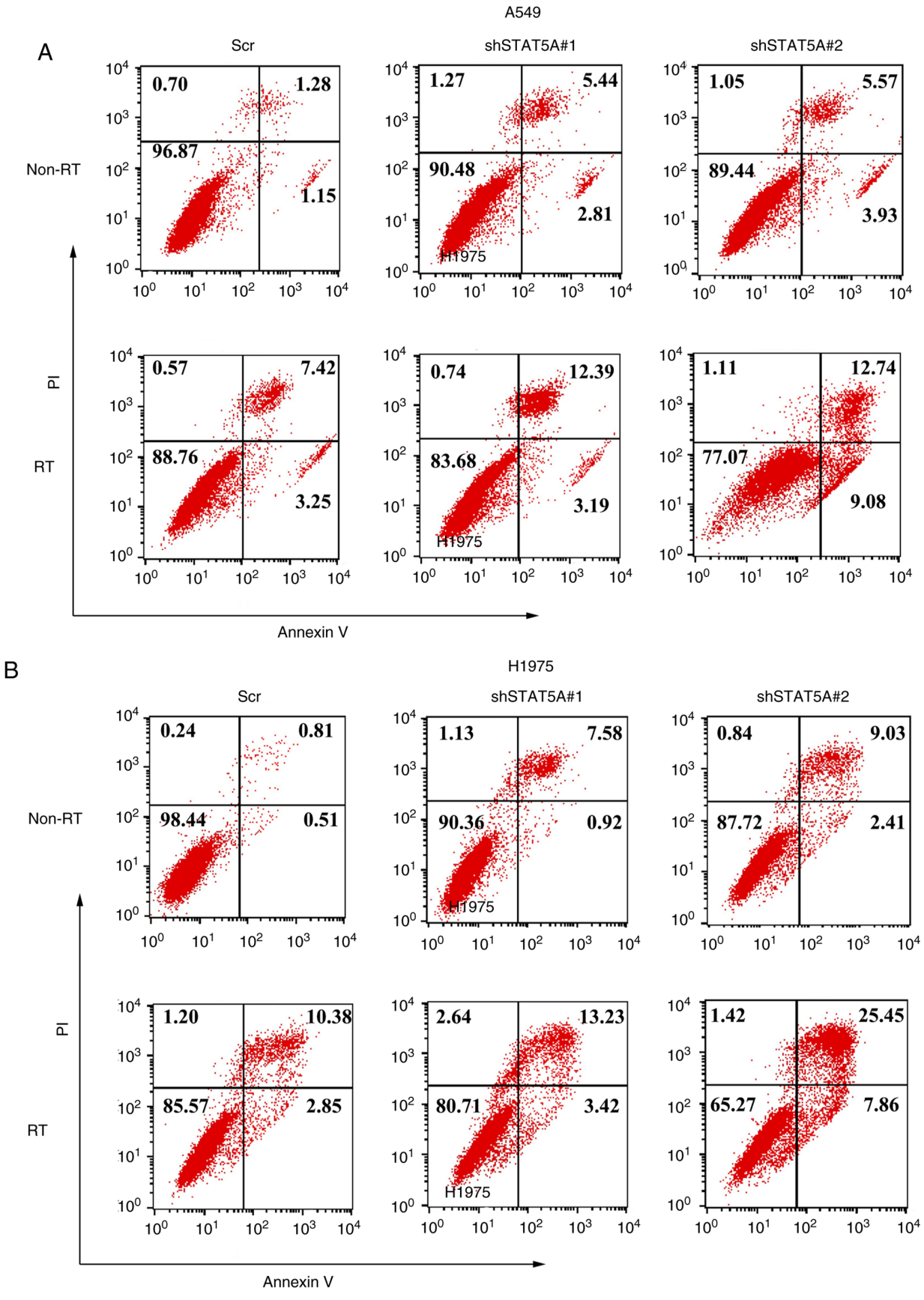

Figure S6. Representative flow cytometry plots of apoptosis distribution shown in Fig. 3F. (A) A549 + Jurkat T and (B) H1975 + Jurkat T cell co-transfections. RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA.

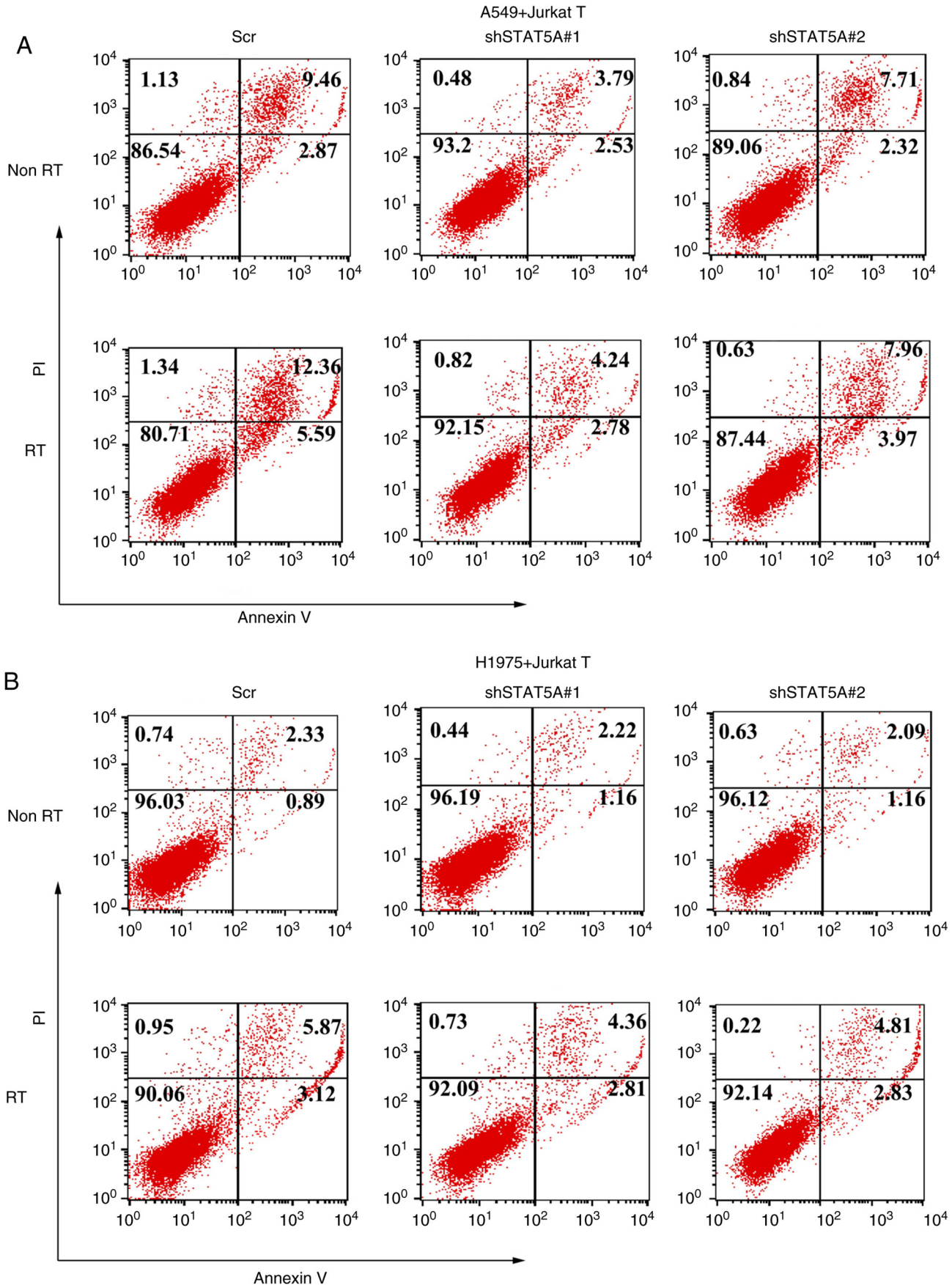

Figure S7. There were no detectable effects of each treatment regimen on body weights of the treated mice. (A) Transduction of LLC cells with shSTAT5A downregulated STAT5A expression compared with in the same cells infected with the corresponding Scr, as determined via western blotting. (B) Body weights were measured. Data arepresented as the mean ± SD of 6 mice/group (BALB/c nude mice) or 5 mice/group (C57BL/6 mice). LLC, Lewis lung carcinoma; RT, radiotherapy; Scr, scrambled shRNA negative control; sh/shRNA, short hairpin RNA.

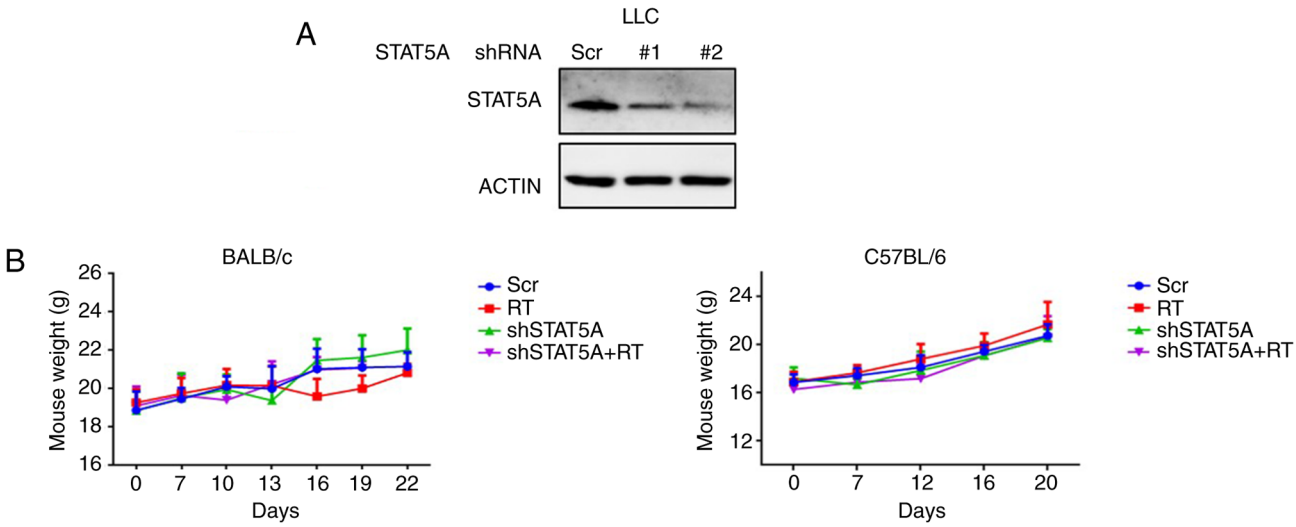

Figure S8. shSTAT5A combined with RT increases CD8$^+$ T cells in the tumor tissue. (A) Representative flow cytometry plots of CD3$^+$, CD4$^+$ and CD8$^+$ T cells in the tumor tissue. (B) Quantification of the flow cytometric analysis results of CD3$^+$, CD4$^+$ and CD8$^+$ T cells from (A). Data are presented as the mean ± SD. *P<0.05 and **P<0.01 vs. Scr. APC, allophycocyanin; Cy, cyanine; PE, phycoerythrin; PerCP, peridinin chlorophyll protein; RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA; SSC, side scatter.

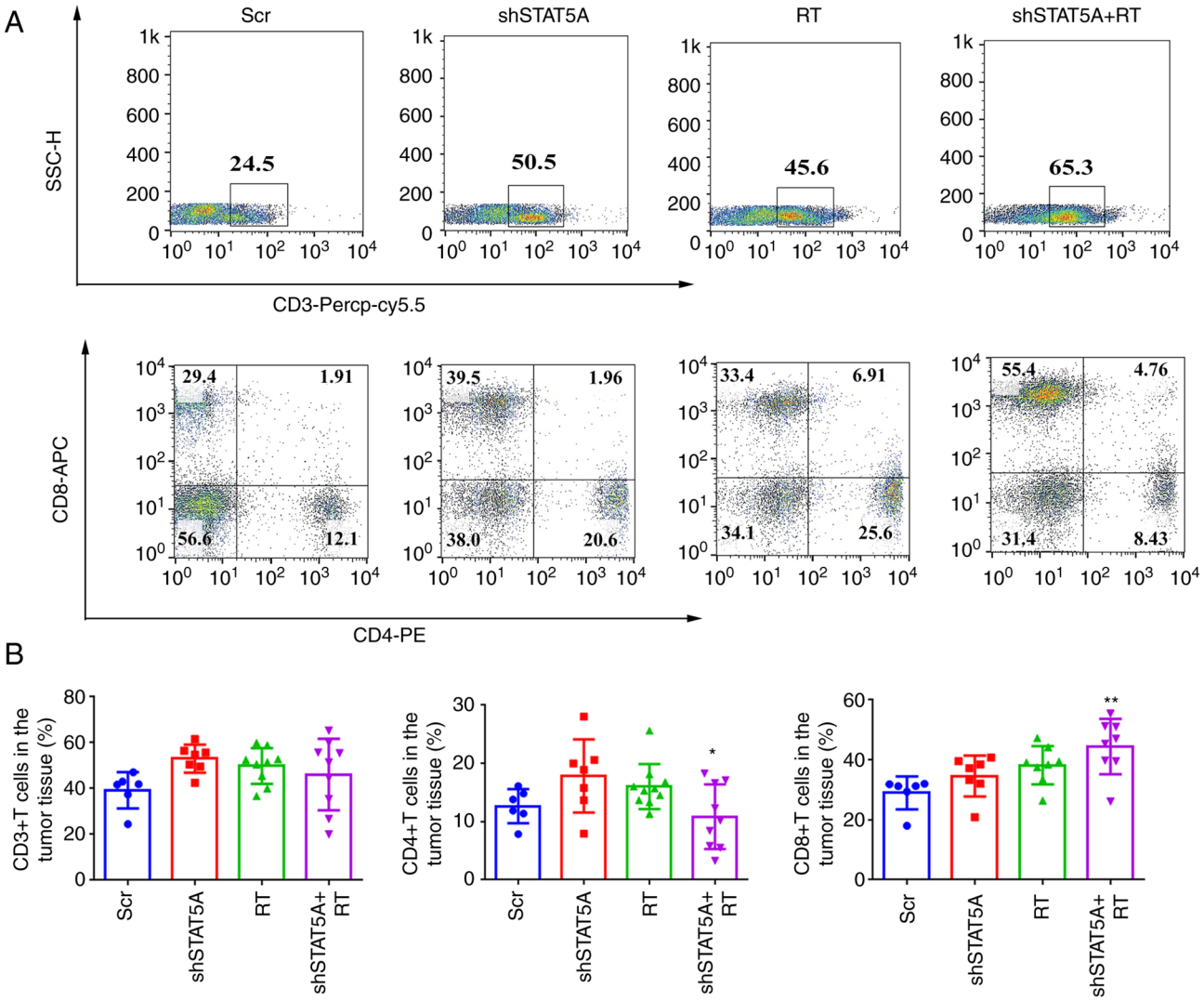

Figure S9. shSTAT5A combined with RT decreases Tregs in the tumor tissue. (A) Representative flow cytometry plots of $CD4^+FOXP3^+$ Tregs in tumor tissue. (B) Flow cytometric analysis results of $CD4^+FOXP3^+$ Tregs in tumor tissue. Data are presented as the mean ± SD. $^*P<0.05$ vs. Scr. APC, allophycocyanin; FOXP3, forkhead box P3; ns, not significant; PE, phycoerythrin; RT, radiotherapy; Scr, scrambled shRNA negative control; sh, short hairpin RNA; Tregs, regulatory T cells.