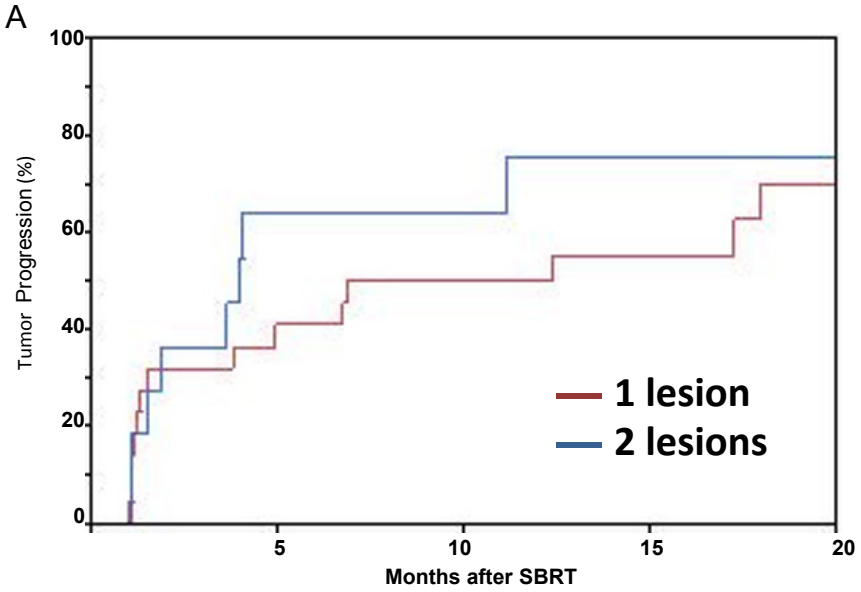
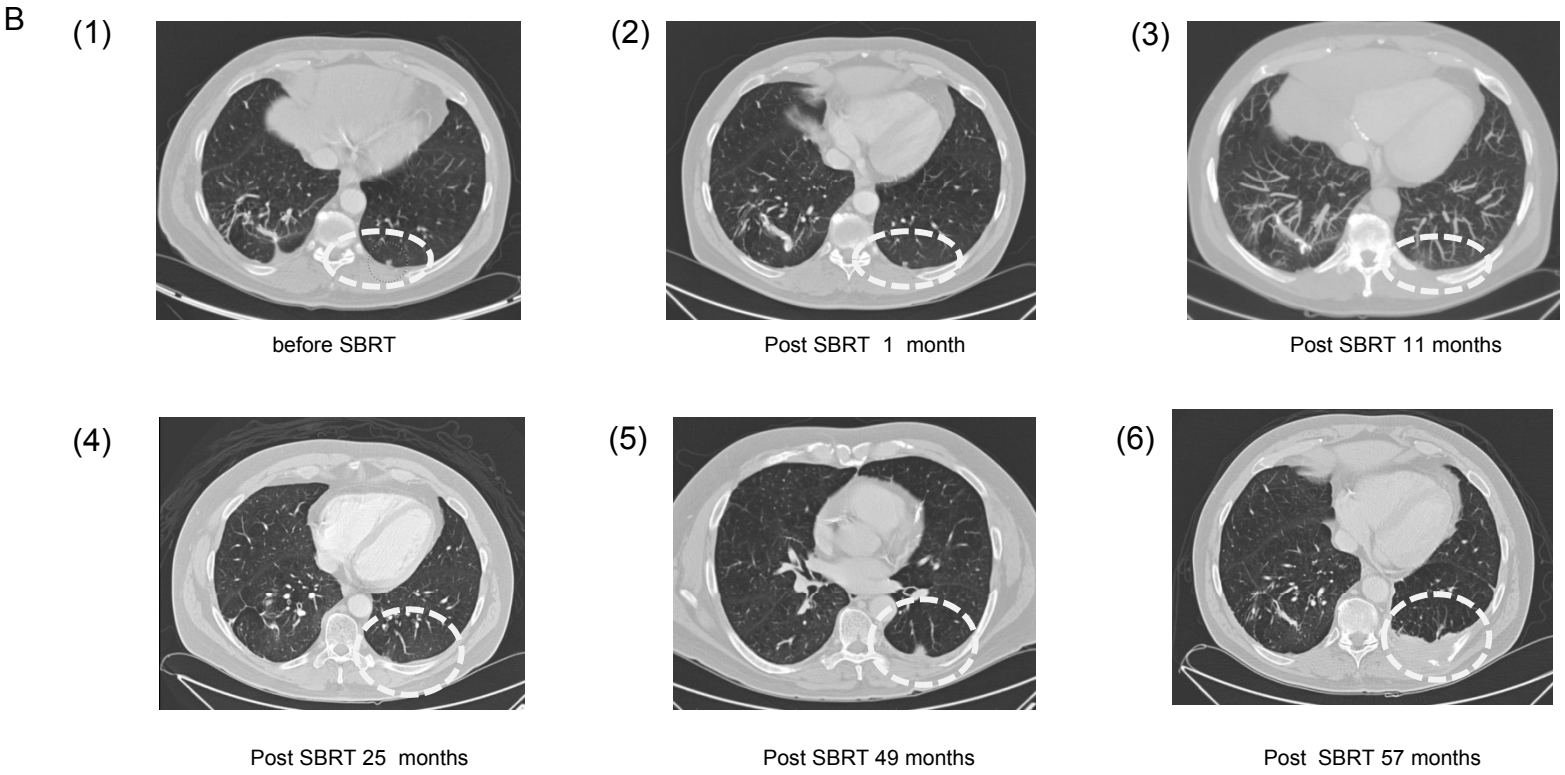


Figure S1 Progression-free/equilibrium diseases are prevailing in cancer patients with ablative SBRT treatment. **(A)** Percentage of tumor progression over time from patients who have 1-2 oligometastatic lesions. Number of patients: 42; Number of lesions, 53; Lesion sites, see Table S1. **(B)** CT images of the lung metastatic lesion of a representative patient. CT scans were displayed chronically (1) through (6). The patient had a larynx primary cancer. The lung lesion was treated with three doses of 12Gy and deemed cured by CT scan one year after SBRT (3). Five years later the tumor recurred locally, rapidly grew to invade the chest wall (6). The tumor sites were circled in each scan.



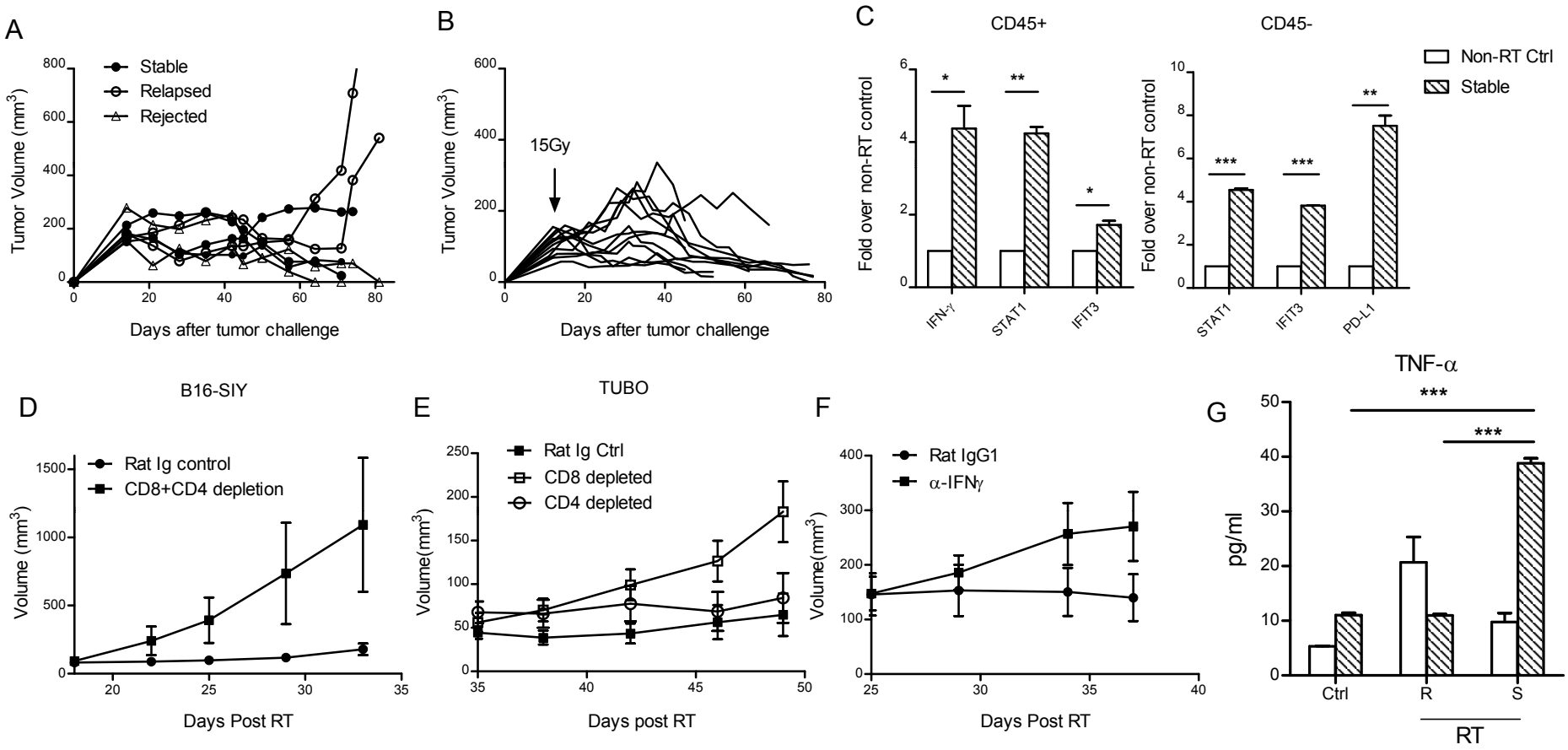


Figure S2 (A) TUBO tumors are maintained over extended period of time with differential outcomes. Representative tumors are shown. Solid circle, long term stable disease; Open circle, late relapse; Triangle, tumor rejection. **(B)** TUBO tumors can stay stable in size for as long as 60 days after radiation. These tumors were from numerous different experiments and were maintained as controls in various depletion experiments. **(C)** Real-time PCR showed the alteration of gene expression. Untreated or stable tumors were harvested three weeks after RT. $P<0.05$, $N=4$. The experiments were repeated two times with similar results.

(**D, E**) T cells are required to maintain stable tumors. Absolute volume of tumors from the same experiment as Fig 3A, B are shown. (**F**) IFNγ is essential for maintaining equilibrium in stable diseases. . Absolute volume of tumors from the same experiment as Fig 4A are shown.

(G) TNF-α level secreted by stimulated T cells in stable tumors was elevated by CBA assay. ($p<0.0001$). Responder tumors (R) and stable tumors (S) were harvested on the day 8 and 40 after RT, respectively. n=4. Open bar, 3T3KB non-specific antigen control; striped bar, 3T3NKB neu antigen specific T cells. The experiments were repeated two times with similar results.