Supplementary Material

1 Supplementary Tables

Supplementary Table1: Antibodies used in flow cytometry

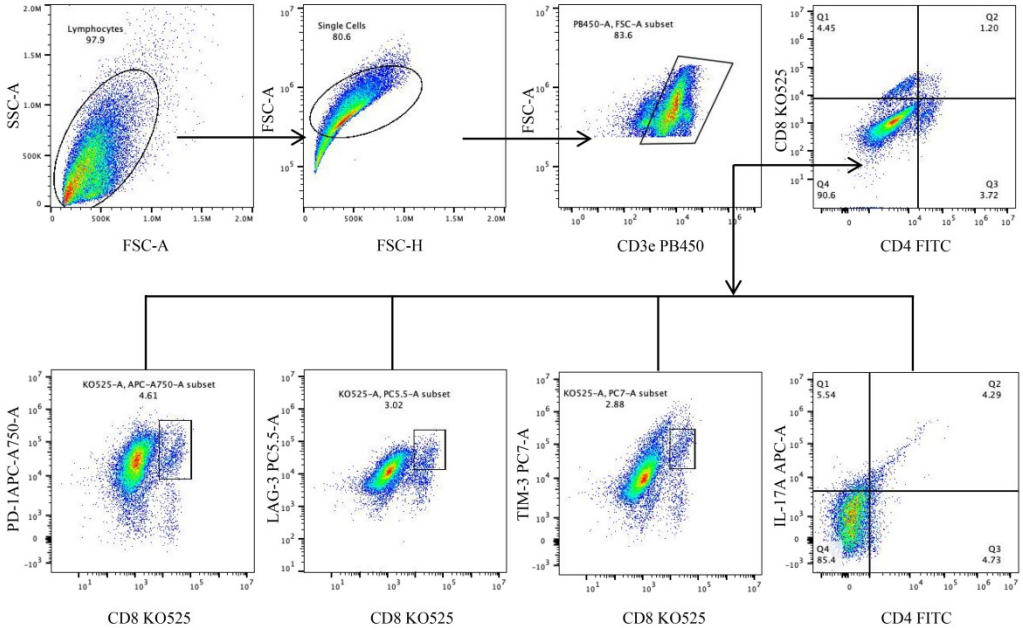
Antibodies	Catalog No.	dilution ratio
CD3e Monoclonal Antibody (145-2C11), eFluor™ 450	48-0031-80	1: 5
CD4 Monoclonal Antibody (GK1.5), FITC	11-0041-82	1: 2
CD8a Monoclonal Antibody (53-6.7),Brilliant Violet™ 480	17-7177-81	1: 5
IL-17A Monoclonal Antibody (eBio17B7), APC, eBioscience™80	47-9985-82	1: 5

Supplementary Table2: Antibodies used in western blot

Antibodies	Catalog No.	Dilution ratio	Manufactor
GAPDH antibody	A19L10	1: 10000	Selleck Chemicals, Inc.
NF-κB p65 Antibody	G23D18	1: 1000	Selleck Chemicals, Inc.
Phospho- NF-κB p65 (Ser536) Antibody	M4C8	1:1000	Selleck Chemicals, Inc.
Anti-IL-17RA Receptor Rabbit pAb	GB11289	1:6000	Servicebio Technology Group, Inc.
Act1 Antibody	（WW-18）: sc-100647	1:500	SANTA CRUZ BIOTECHNOLOGY,INC

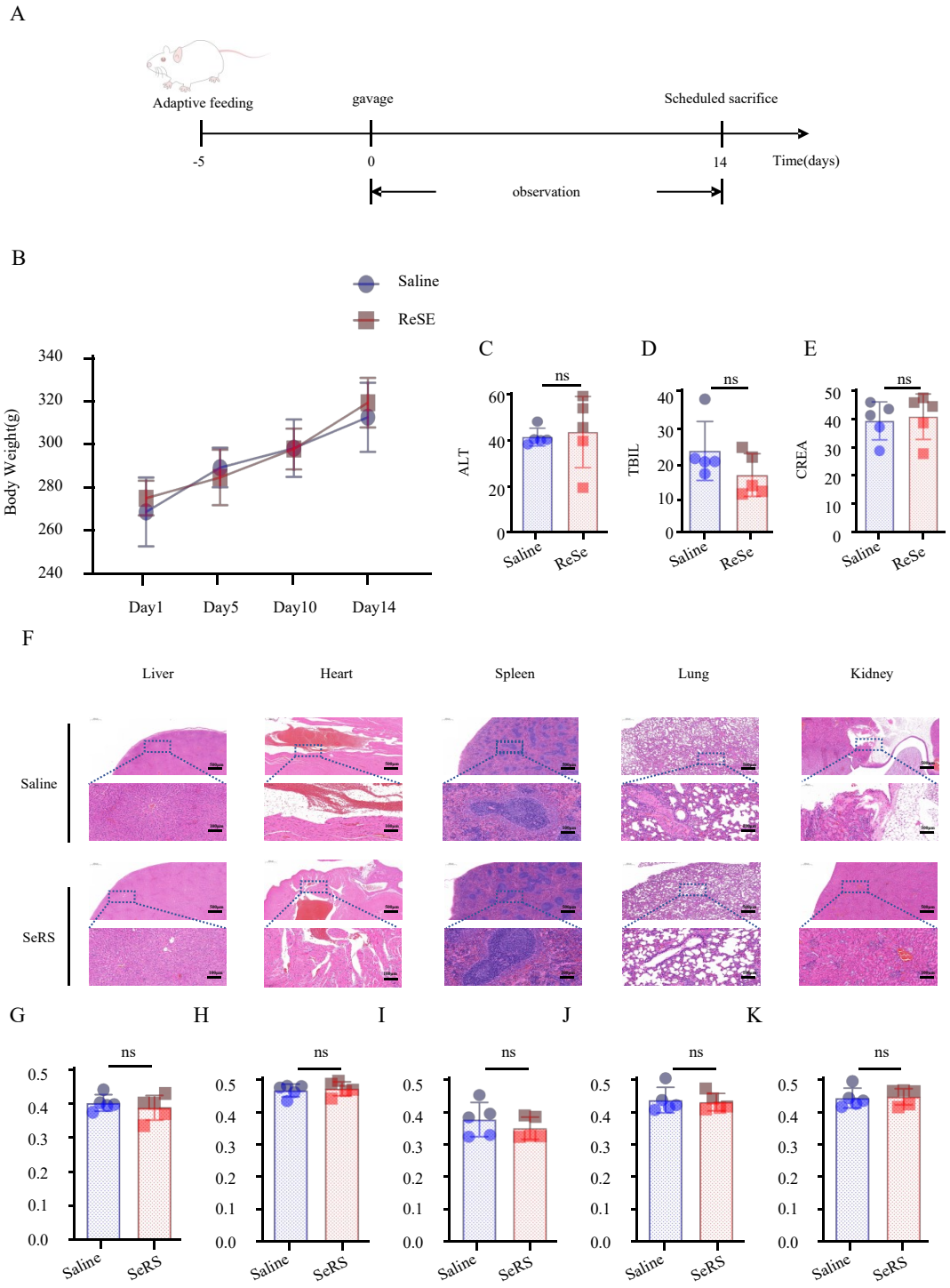
2 Supplementary Figures

Supplementary Figue 1: The gating strategy for flow cytometry of tumor-associated macrophages and tumor-infiltrating T cells.



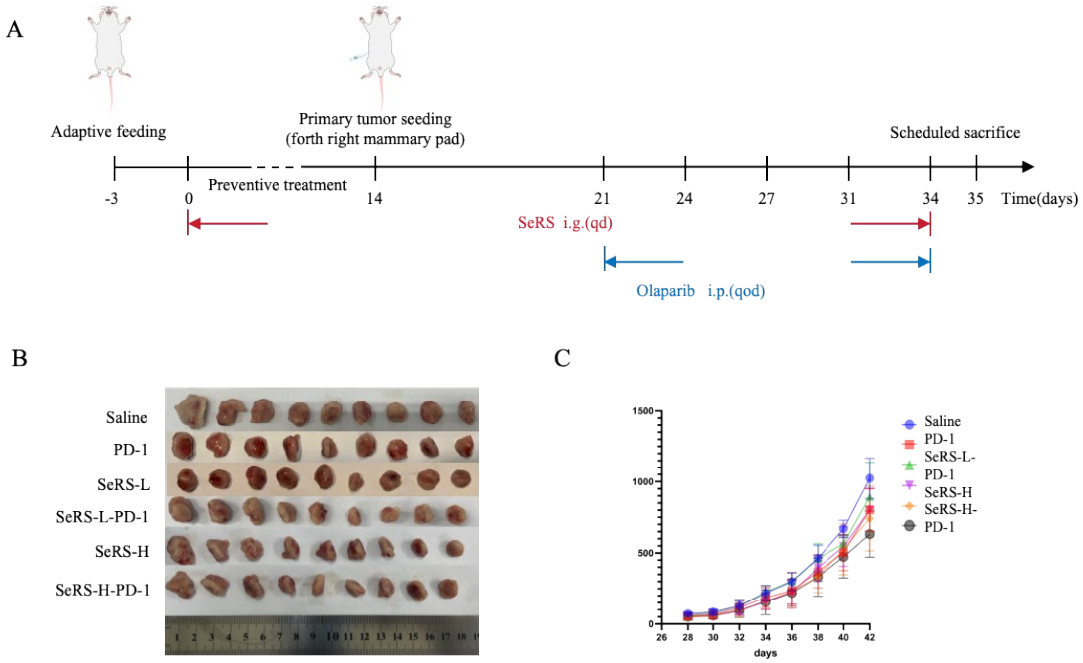
Supplementary Figue 1: The gating strategy for flow cytometry of tumor-associated macrophages and tumor-infiltrating T cells. Flow cytometry gating strategy for analyzing tumor-infiltrating immune cell subsets. Key subsets analyzed include Th17 cells (identified as $CD4^+IL-17A^+$), conventional $CD4^+$ T cells, $CD8^+$ T cells, and exhausted T cell populations characterized by co-expression of $LAG-3^+$, $TIM-3^+$, and $PD-1^+$.

Supplementary Figue 2: acute oral toxicity study



Supplementary Figue 2: acute oral toxicity study (A) Schematic of the acute oral toxicity study timeline. The experimental design illustrates the time points of SeRS administration and sample collection in rats.**(B)**Body weight growth curve of rats in Saline and SeRS groups.The average body weight of rats was measured periodically and plotted over time to monitor systemic tolerance and potential toxicity. Data are expressed as the mean ± SEM. No statistically significant difference was observed between the two groups over the study period;(C)Plasma ALT levels in Saline and SeRS groups.The bar chart shows the statistical comparison of alanine aminotransferase (ALT) ratios in rat plasma between the two groups. Data are expressed as the mean ± SEM. Statistical analysis by unpaired Student's t-test showed no significant difference (ns);(D)Plasma TBIL levels in Saline and SeRS groups.Comparison of total bilirubin (TBIL) concentrations in rat plasma.Data are expressed as the mean ± SEM. Statistical analysis by unpaired Student's t-test showed no significant difference (ns);(E)Plasma CREA levels in Saline and SeRS groups.Comparison of creatinine (CREA) ratios in rat plasma. Data are expressed as the mean ± SEM. Statistical analysis by unpaired Student's t-test showed no significant difference (ns);(F)Histopathological analysis of major organs. Representative hematoxylin and eosin (H&E)-stained sections of the liver, heart, spleen, lung, and kidney from the Saline control group and the SeRS-treated group. Images show morphological comparisons between the two groups. Scale bar = 500 μm.
(G-K)Organ indices of rats in Saline and SeRS groups.Bar charts show the quantification of the(G)liver index (liver weight/body weight × 100%),(H)heart index,(I)spleen index,(J)lung index,and(K)kidney index. Data are expressed as the mean ± SEM. Statistical comparisons by unpaired Student's t-tests showed no significant differences between the Saline and SeRS groups for any organ index (ns).

Supplementary Figue 3: Dose-finding and synergistic effect of SeRS with anti-PD-1 therapy in the mouse model.



Supplementary Figue 3: Dose-finding and synergistic effect of SeRS with anti-PD-1 therapy in the mouse model. (A) Schematic overview of the experimental design. (B) Representative images of excised tumors from each treatment group. (C) Tumor growth curves.Were measured every two days. Tumor volume was calculated as (length × width²)/2. (n = 9). (one-way ANOVA with Tukey's correction).