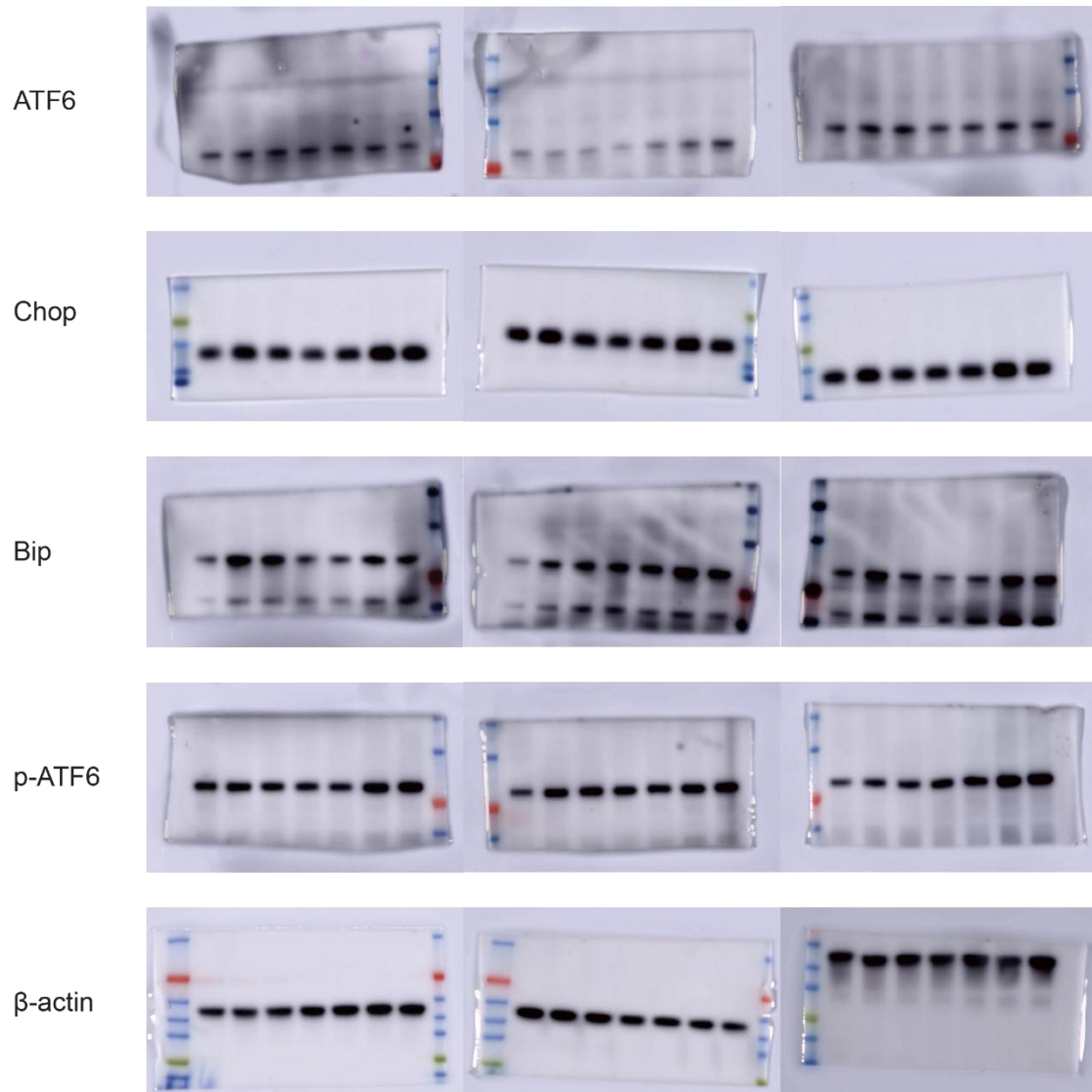
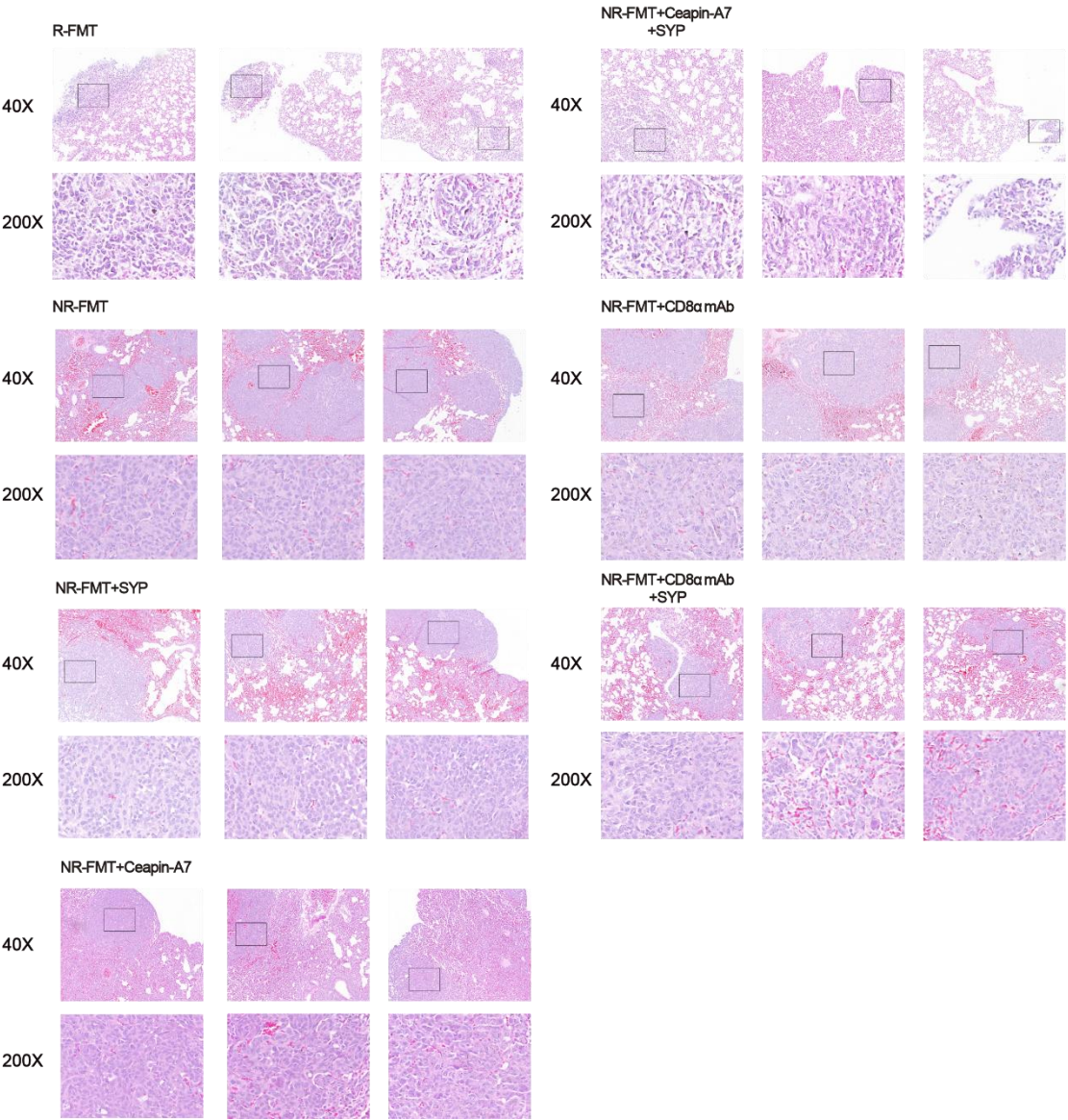


Supplementary Figure S1:Original Western blot images for proteins analyzed in the study.

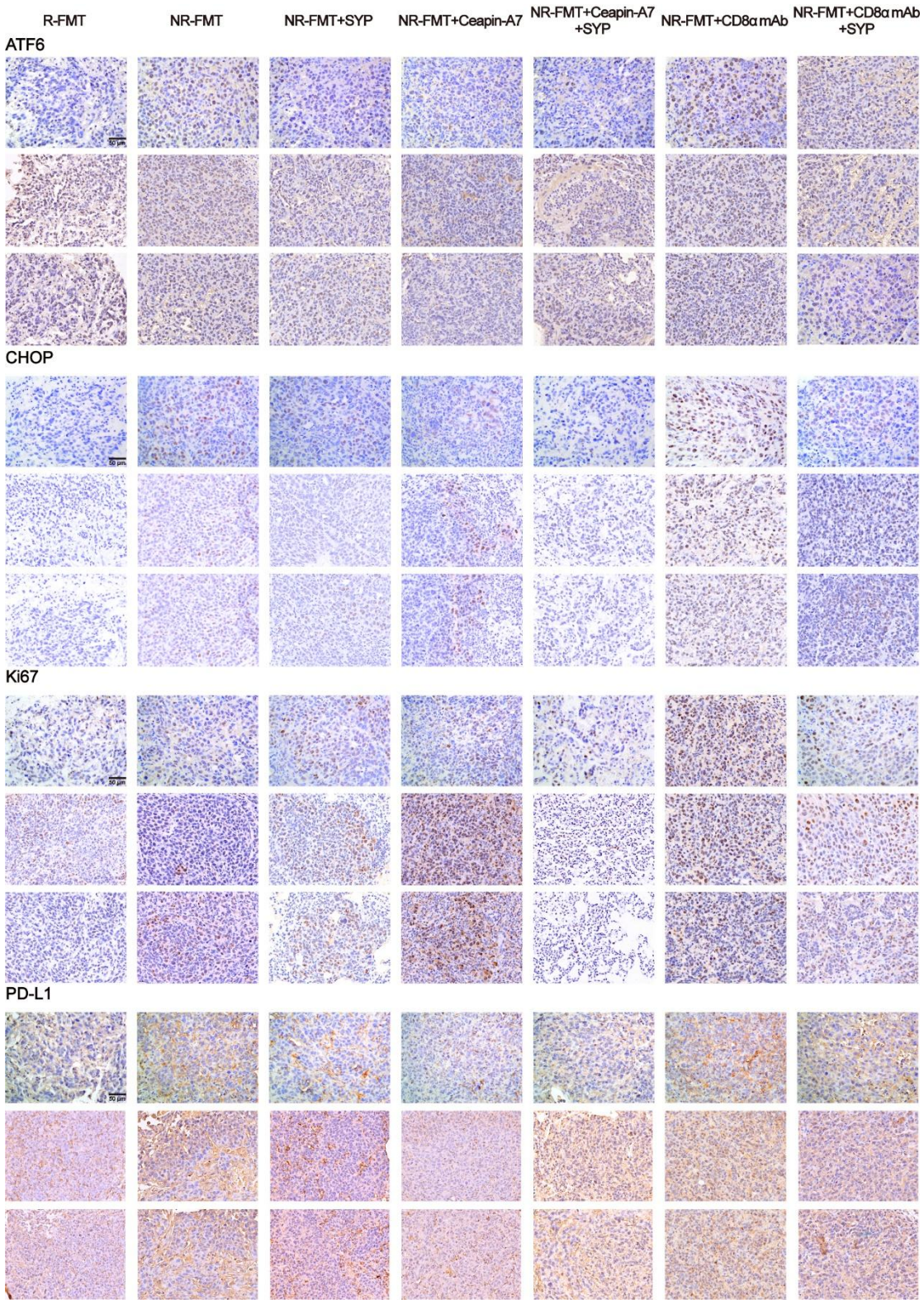


Note: Representative uncropped Western Blot images of ATF6, Chop, Bip, and p-ATF6 in mouse lung tissues, with β -actin serving as the loading control. For all gels, the lanes (from left to right) correspond sequentially to the following experimental groups: R-FMT , NR-FMT, NR-FMT + SYP, NR-FMT + Ceapin-A7, NR-FMT + Ceapin-A7 + SYP, NR-FMT + CD8 α mAb and NR-FMT + CD8 α mAb + SYP.

Supplementary Figure S2: H&E Staining of Lung Tumor Tissues



Supplementary Figure S3: Immunohistochemical analysis of ATF6, CHOP, Ki67, and PD-L1 expression in lung tumor tissues.



Note: All images were acquired at 400× magnification. The raw Positive Area Ratio values are provided in Revised Supplementary Table S1.

Supplementary Table S1: Raw Positive Area Ratio for Immunohistochemistry(n=3)

Group	Ki67 Mean Density	ATF6 Mean Density	CHOP Mean Density	PD-L1 Mean Density
R-FMT	0.00815	0.006086985	0.0006	0.006278
	0.008502	0.006234983	0.000615	0.006413
	0.007836	0.006169751	0.000607	0.006198
NR-FMT	0.036842	0.022918718	0.017082	0.024584
	0.037781	0.023173949	0.017207	0.025094
	0.036181	0.023022322	0.017149	0.024098
NR-FMT+SYP	0.028771	0.019048149	0.012143	0.02036
	0.027945	0.019244722	0.012227	0.020734
	0.029603	0.019094574	0.012131	0.019881
NR-FMT+Ceapin-A7	0.017688	0.012956999	0.008704	0.014266
	0.018426	0.013146561	0.008758	0.014554
	0.016932	0.013036743	0.008717	0.013968
NR-FMT+C-A7+SYP	0.012827	0.008135494	0.004173	0.009696
	0.012157	0.008305145	0.004245	0.009406
	0.013666	0.008181579	0.00421	0.009971
NR-FMT+CD8 mAb	0.050928	0.0329702	0.026533	0.028753
	0.05163	0.033263975	0.026753	0.029177
	0.050115	0.033068876	0.026615	0.028213
NR-FMT+CD8 mAb+SYP	0.035479	0.019850897	0.015337	0.022804
	0.036231	0.020070509	0.01552	0.023106
	0.034757	0.019946498	0.015399	0.022504

Note: Raw Positive Area Ratio values (fraction of total area) derived from ImageJ quantification are rounded to five decimal places. The average and standard deviation (Mean $\pm$ SD) calculated from these values are presented in the main text Figure 8 A.

Supplementary Table S2 Quantitative PCR raw data for ATF6 gene expression.

Sample	ATF6 CT value	β -actin CT value	Mean Δ Ct (ATF6- β actin)	Relative Expression (Mean $\pm$ SD)*
R-FMT	21	11.91	9.18	2.503 $\pm$ 0.208
	20.9	11.58		
	21.04	11.91		
NR-FMT	19.16	12.17	7.26	9.527 $\pm$ 1.721
	19.48	12.18		
	19.92	12.42		
NR-FMT+SYP	19.72	12.07	7.63	7.325 $\pm$ 0.571
	19.79	12.06		
	19.78	12.27		
NR-FMT+Ceapin-A7	20.71	12.05	8.64	3.631 $\pm$ 0.088
	20.47	11.81		
	20.84	12.24		
NR-FMT+Ceapin-A7+SYP	20.97	12.09	8.97	2.904 $\pm$ 0.276
	21.01	12.12		
	21.25	12.12		
NR-FMT+CD8 α mAb	19.06	12.17	6.91	12.070 $\pm$ 0.128
	19.15	12.23		
	19.36	12.45		
NR-FMT+CD8 α mAb+SYP	19.39	12.03	7.35	8.878 $\pm$ 0.164
	19.45	12.13		
	19.57	12.2		

Note: Relative expression calculated using the $2^{(-\Delta\Delta Ct)}$ method, with the average Δ Ct of the R-FMT group serving as the calibrator. All values are rounded to three decimal places.

Supplementary Table S2 Quantitative PCR raw data for CHOP gene expression.

Sample	CHOP CT value	β -actin CT value	Mean Δ Ct (CHOP- β actin)	Relative Expression (Mean $\pm$ SD)*
R-FMT	23.81	13.48	10.5	1.004 $\pm$ 0.111
	24.11	13.47		
	24.25	13.72		
NR-FMT	21.28	13.26	8.31	4.613 $\pm$ 0.851
	21.73	13.33		
	21.86	13.35		
NR-FMT+SYP	22.55	13.8	8.94	2.970 $\pm$ 0.428
	22.78	13.88		
	23.06	13.89		
NR-FMT+Ceapin-A7	22.71	13.39	9.42	2.121 $\pm$ 0.200
	22.64	13.28		
	22.91	13.33		
NR-FMT+Ceapin-A7+SYP	24.06	14.11	9.81	1.617 $\pm$ 0.189
	23.65	13.79		
	23.2	13.57		
NR-FMT+CD8 α mAb	21.36	13.44	7.88	6.185 $\pm$ 0.842
	21.67	14		
	21.58	13.53		
NR-FMT+CD8 α mAb+SYP	21.8	13.53	8.44	4.181 $\pm$ 0.505
	22.24	13.8		
	22.66	14.04		

Note: Relative expression calculated using the $2^{(-\Delta\Delta Ct)}$ method, with the average Δ Ct of the R-FMT group serving as the calibrator. All values are rounded to three decimal places.