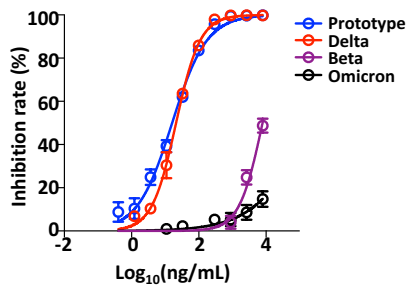
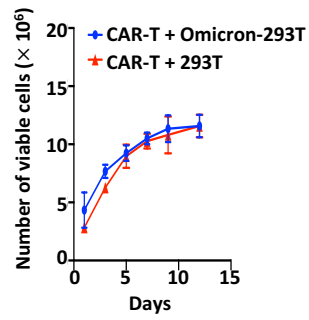
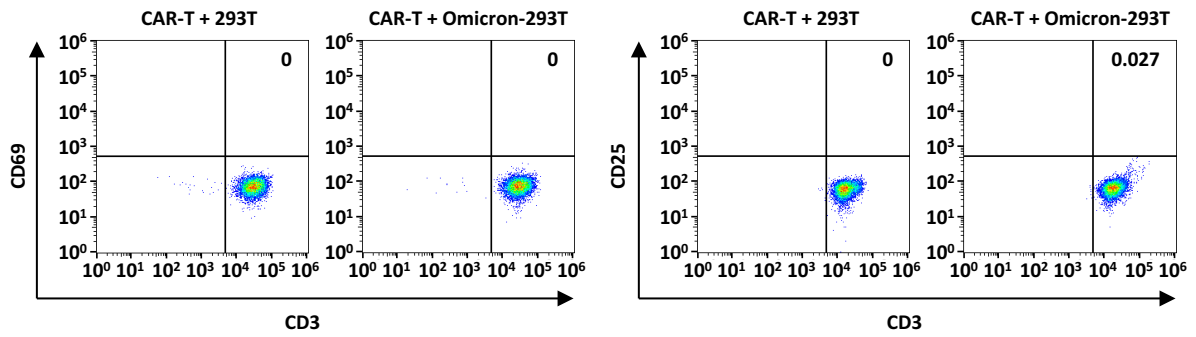


A**C****B**

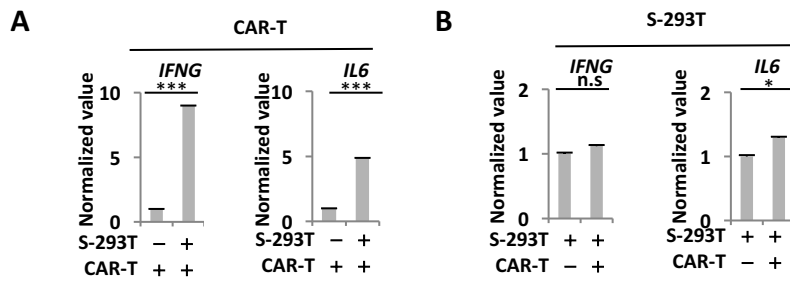


Figure S2

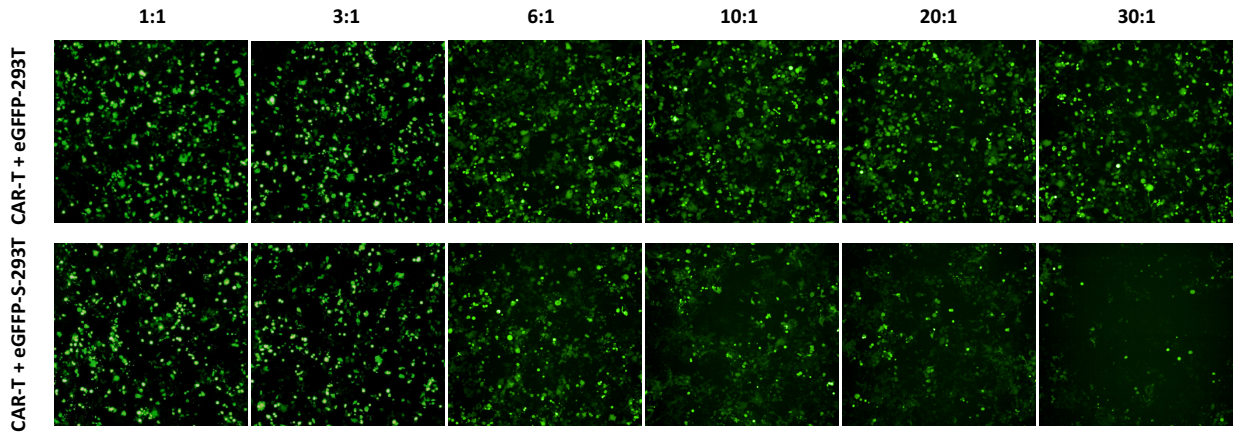


Figure S3

A

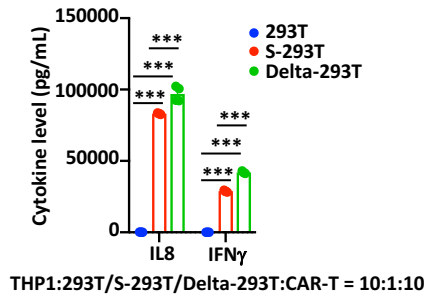
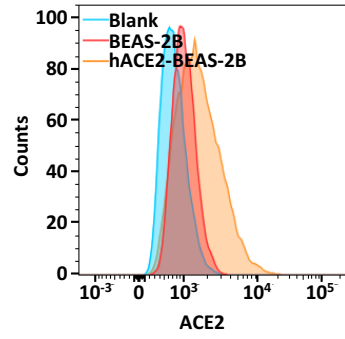
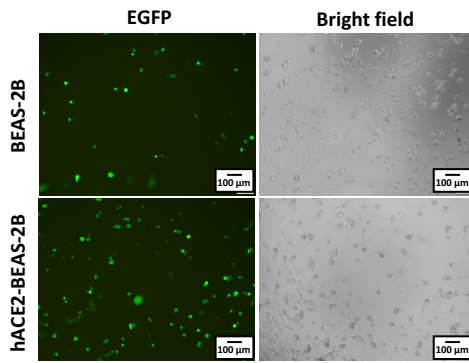
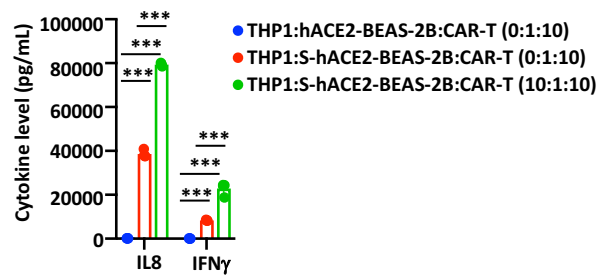
	CAR-T + 293T	+	-	
	CAR-T + S-293T	-	+	
Proliferation	<i>IL2RA</i>	1.00, ±0.00	1.51, ±0.02	**
	<i>IL2</i>	1.00, ±0.00	1.90, ±0.31	**
	<i>AP1</i>	1.00, ±0.00	3.49, ±0.05	****
Activation	<i>NFAT1</i>	1.00, ±0.00	1.21, ±0.04	*
	<i>RELA</i>	1.00, ±0.00	2.31, ±0.06	**
	<i>RELB</i>	1.00, ±0.00	2.27, ±0.17	**
IFN γ response	<i>VCAM1</i>	1.00, ±0.00	9.23, ±0.50	****
	<i>IFNG</i>	1.00, ±0.00	1.95, ±0.07	*
	<i>CXCL10</i>	1.00, ±0.00	4.40, ±0.19	****
	<i>CXCL11</i>	1.00, ±0.00	5.08, ±0.53	****
	<i>FASLG</i>	1.00, ±0.00	3.74, ±0.62	****
Cytotoxicity		Mean, ± SD		

B

	CAR-T + 293T	+	-		
	CAR-T + S-293T	-	+		
Naïve-associated genes	<i>ACTN1</i>	1.00, ±0.00	0.78, ±0.07	*	
	<i>FOXP1</i>	1.00, ±0.00	0.72, ±0.06	*	
	<i>TAF4B</i>	1.00, ±0.00	0.63, ±0.29	*	
	<i>IL6ST</i>	1.00, ±0.00	0.60, ±0.05	****	
	<i>TCF7</i>	1.00, ±0.00	0.57, ±0.01	****	
	<i>CD62L</i>	1.00, ±0.00	0.37, ±0.04	****	
Effector-associated genes	<i>PRDM1</i>	1.00, ±0.00	1.65, ±0.01	****	
	<i>GZMA</i>	1.00, ±0.00	2.17, ±0.07	****	
	<i>TBX21</i>	1.00, ±0.00	3.82, ±0.24	****	
	<i>EOMES</i>	1.00, ±0.00	5.45, ±0.19	****	
	<i>KLRG1</i>	1.00, ±0.00	5.32, ±0.04	****	
	<i>PLEK</i>	1.00, ±0.00	7.62, ±0.14	****	
	Cytotoxicity		Mean, ± SD		

C

	CAR-T + 293T	+	-	
	CAR-T + S-293T	-	+	
Exhaustion TF	<i>IRF4</i>	1.00, ±0.00	1.81, ±0.05	**
	<i>BATF</i>	1.00, ±0.00	1.50, ±0.12	**
Checkpoints	<i>BTLA</i>	1.00, ±0.00	1.27, ±0.09	*
	<i>LAG3</i>	1.00, ±0.00	2.47, ±0.07	****
	<i>CTLA4</i>	1.00, ±0.00	1.28, ±0.03	*
	<i>TIM3</i>	1.00, ±0.00	1.44, ±0.07	**
	<i>PD1</i>	1.00, ±0.00	1.18, ±0.15	*
Cytotoxicity		Mean, ± SD		

A**B****C****D**

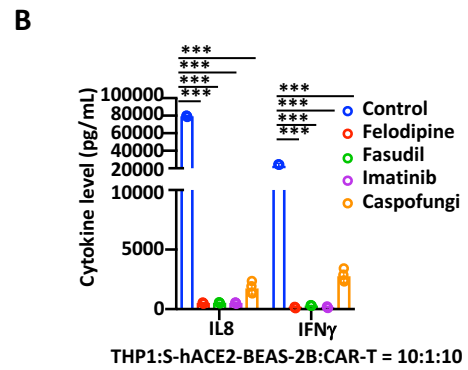
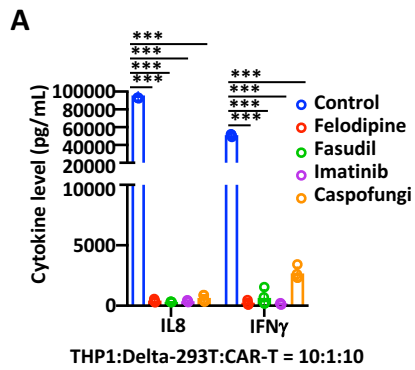
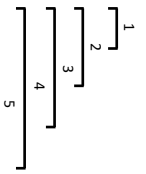


Figure S6

A**B**

1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00	1.00,±0.00
21.67,±2.80	95.1,±1.11	1.92,±1.11	37.68,±7.36	16.55,±4.11	19.50,±10.93	69.16,±9.93	50.65,±10.66	31.87,±9.98	31.48,±2.70	24.08,±3.99	18.81,±5.30	7.72,±0.40	23.63,±1.72	51.12,±2.97	24.10,±3.35	14.18,±2.87	62.46,±6.45
4.21,±0.71	1.95,±0.04	0.65,±0.06	0.11,±0.02	1.32,±0.90	0.14,±0.05	1.21,±0.15	11.87,±9.95	1.52,±0.16	0.43,±0.01	5.08,±0.74	1.77,±0.16	0.30,±0.01	0.47,±0.14	9.43,±0.82	0.15,±0.04	0.17,±0.02	15.70,±0.29
5.09,±2.33	0.45,±0.02	0.37,±0.00	0.27,±0.04	1.36,±0.28	0.32,±0.20	0.54,±0.12	12.90,±10.73	2.32,±0.27	1.16,±0.33	7.10,±0.22	1.74,±0.18	0.67,±0.05	0.63,±0.03	9.46,±0.87	0.40,±0.07	0.41,±0.09	18.16,±1.57
0.78,±0.05	0.52,±0.03	0.28,±0.04	0.26,±0.09	0.78,±0.02	0.46,±0.05	0.83,±0.12	1.50,±0.22	0.74,±0.06	0.39,±0.11	4.49,±0.51	1.22,±0.16	0.46,±0.03	0.68,±0.03	2.01,±0.18	0.28,±0.03	0.19,±0.01	5.53,±1.77
4.07,±0.22	1.93,±0.21	0.43,±0.19	0.15,±0.04	0.97,±0.45	0.32,±0.05	3.22,±0.70	14.36,±3.21	1.82,±0.08	0.58,±0.14	6.51,±0.09	1.69,±0.20	0.71,±0.06	0.47,±0.03	7.43,±0.79	0.34,±0.05	0.22,±0.02	17.71,±4.01
CCL3	CXCL15	CXCL12	IL2	IL4	IL5	IL6	IP10	IL10	IL13	CCL5	IPNG	CSF2	TNF	CCL4	LTA	IL22	IL21



0.0002	0.0001	0.2303	0.0010	0.0028	0.0427	0.0003	0.0013	0.0059	0.0000	0.0006	0.0043	0.0000	0.0000	0.0000	0.0003	0.0014	0.0001
0.0016	0.0006	0.0420	0.0007	0.5886	0.0003	0.1396	0.0000	0.0099	0.0000	0.0007	0.0015	0.0000	0.0027	0.0001	0.0012	0.0003	0.0000
0.0028	0.0014	0.0049	0.0016	0.2011	0.0073	0.0115	0.1275	0.0015	0.4457	0.0000	0.0026	0.0016	0.0000	0.0001	0.0046	0.0026	0.0001
0.1051	0.0142	0.0032	0.0022	0.2679	0.0021	0.1776	0.1052	0.0253	0.0007	0.0004	0.0981	0.0001	0.0001	0.0010	0.0019	0.0003	0.0129
0.0000	0.0003	0.0213	0.0009	0.9206	0.0008	0.0057	0.0020	0.0006	0.0077	0.0000	0.0048	0.0037	0.0000	0.0002	0.0028	0.0004	0.0020
CCL3	CXCL15	CXCL12	IL2	IL4	IL5	IL6	IP10	IL10	IL13	CCL5	IPNG	CSF2	TNF	CCL4	LTA	IL22	IL21

**Figure S7**

