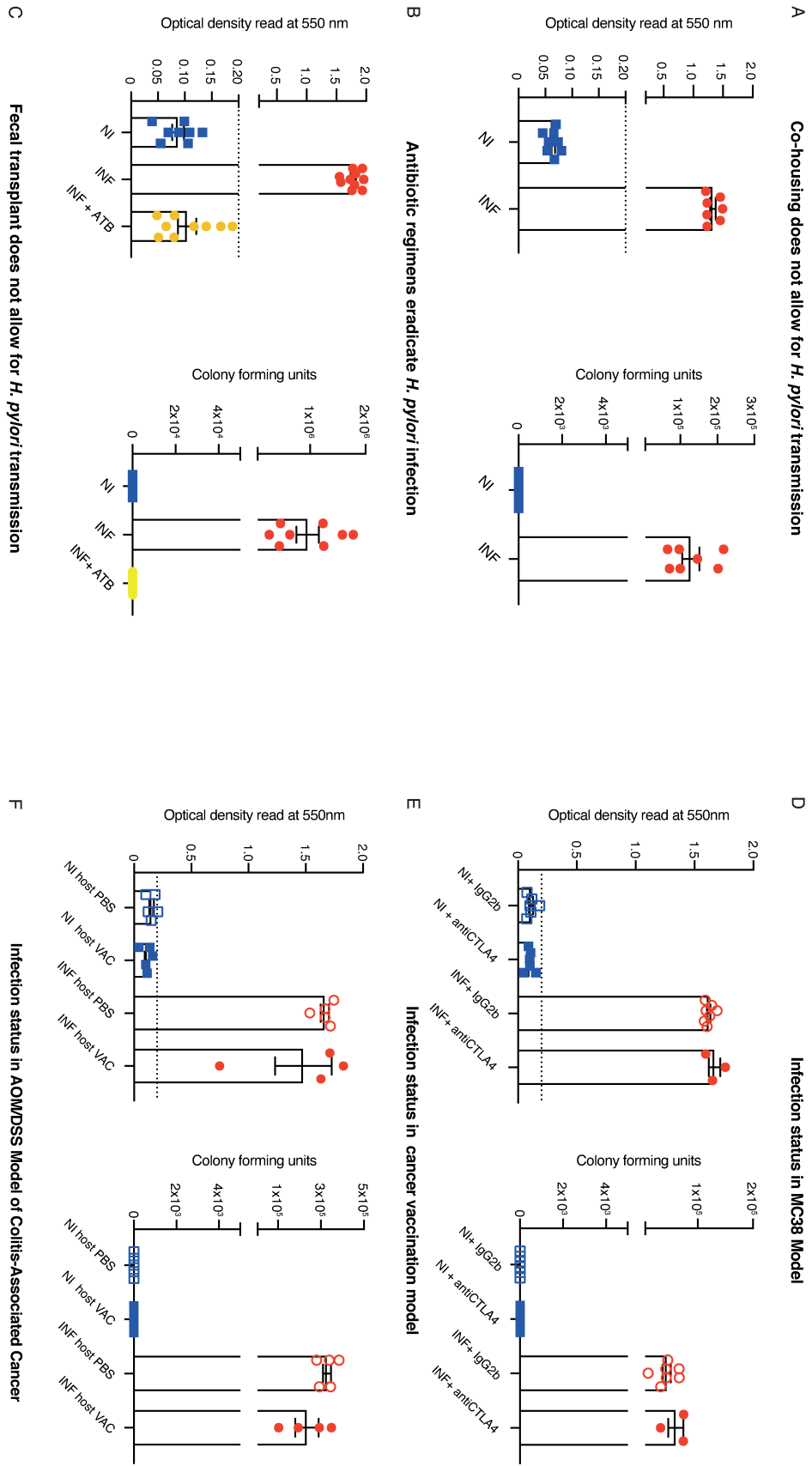
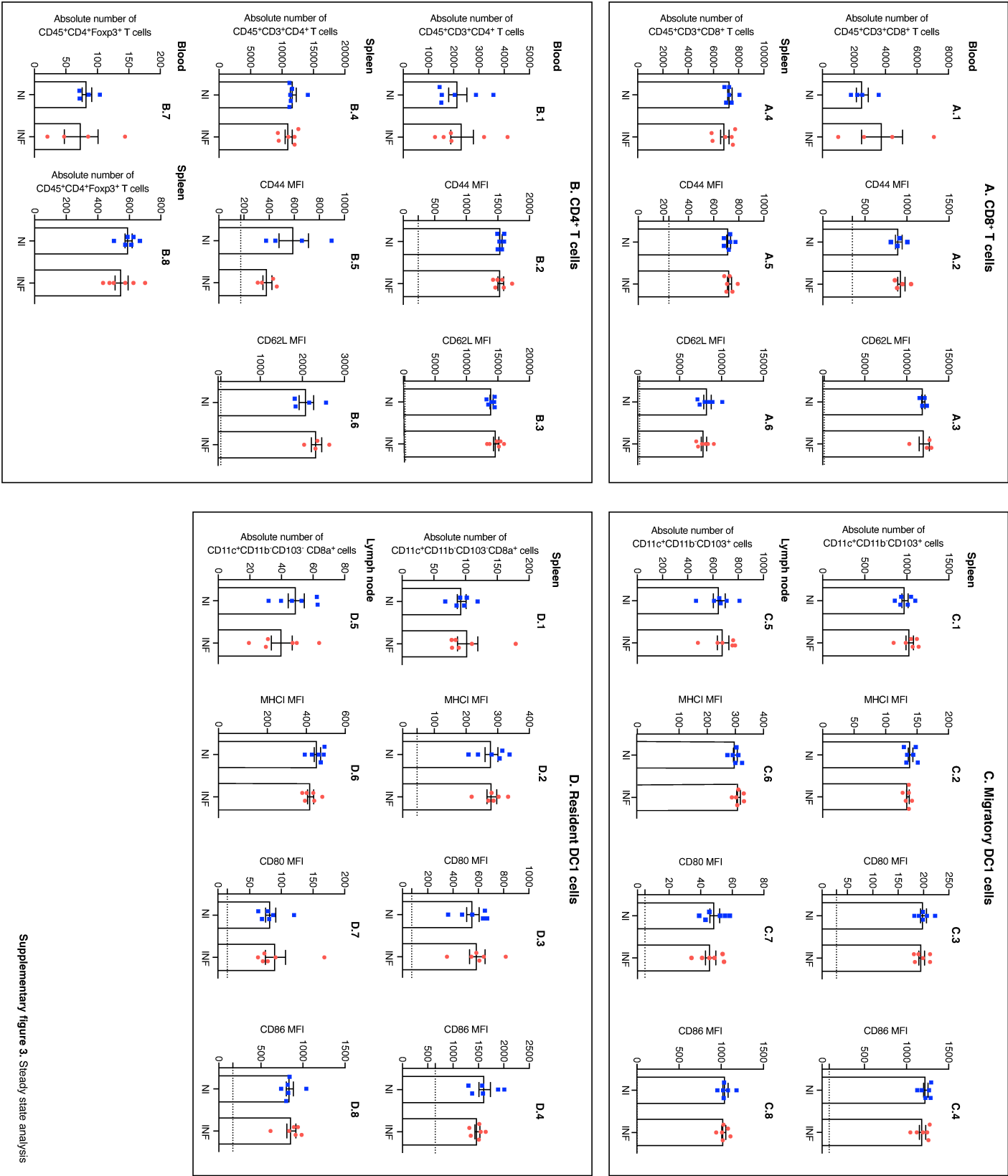


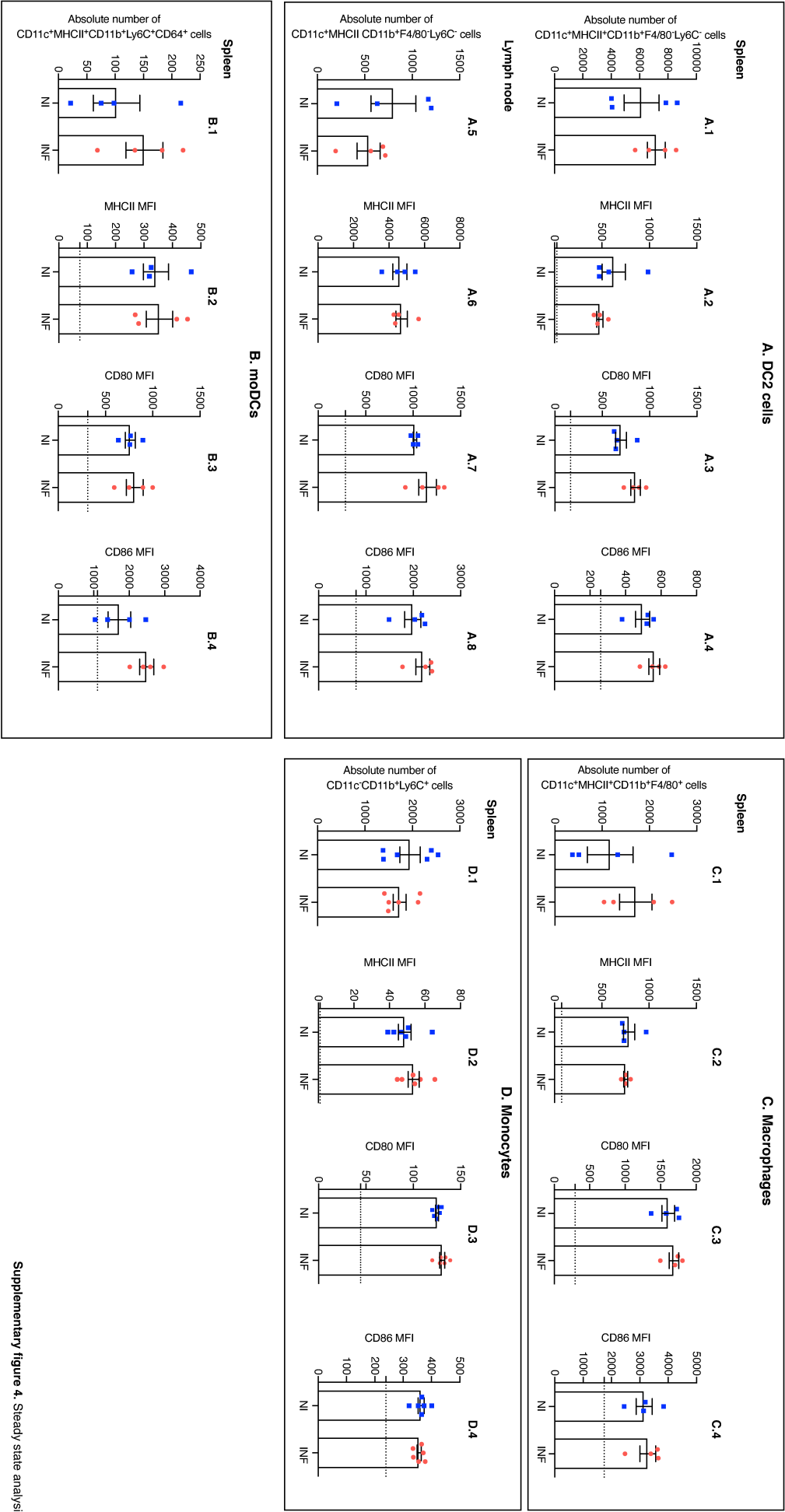
Supplementary figure 1. Description of the mouse tumor models.



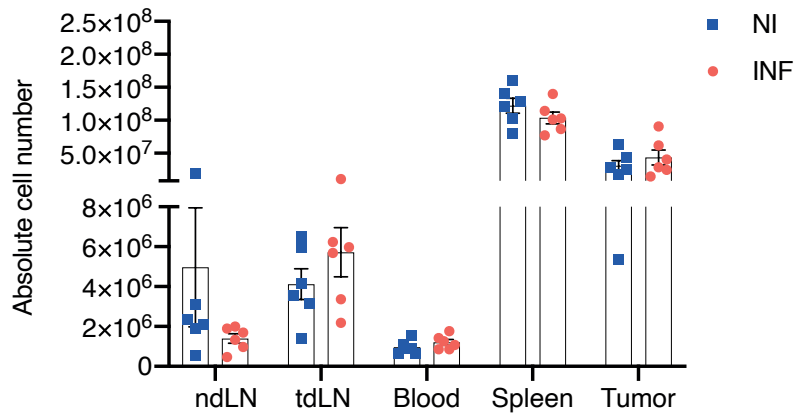
Supplementary figure 2. Infection status of mice



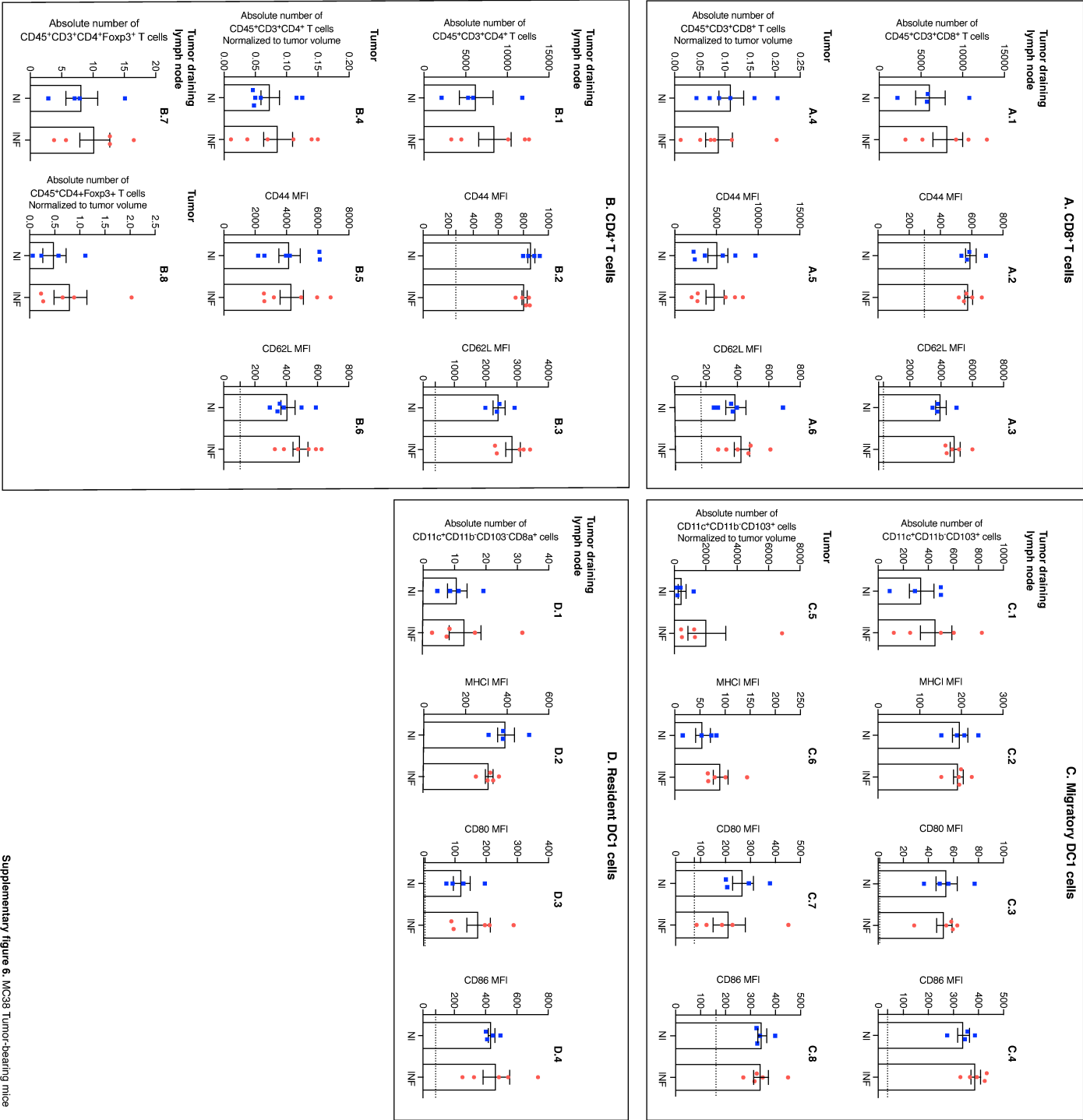
Supplementary figure 3. Steady state analysis

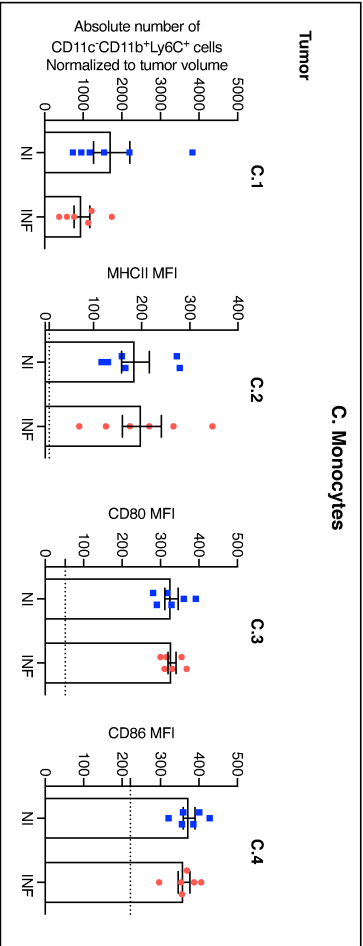
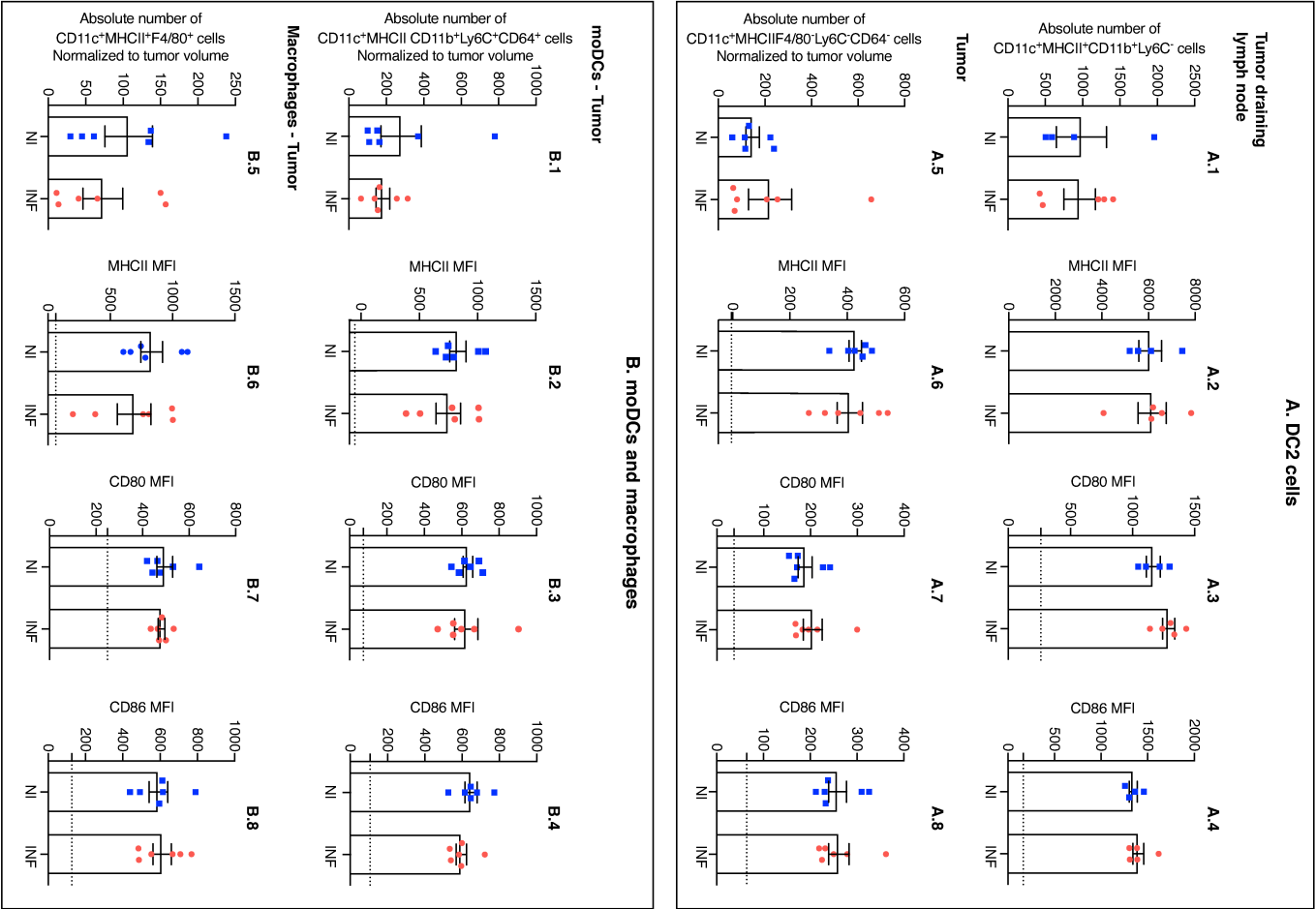


Supplementary figure 4. Steady state analysis

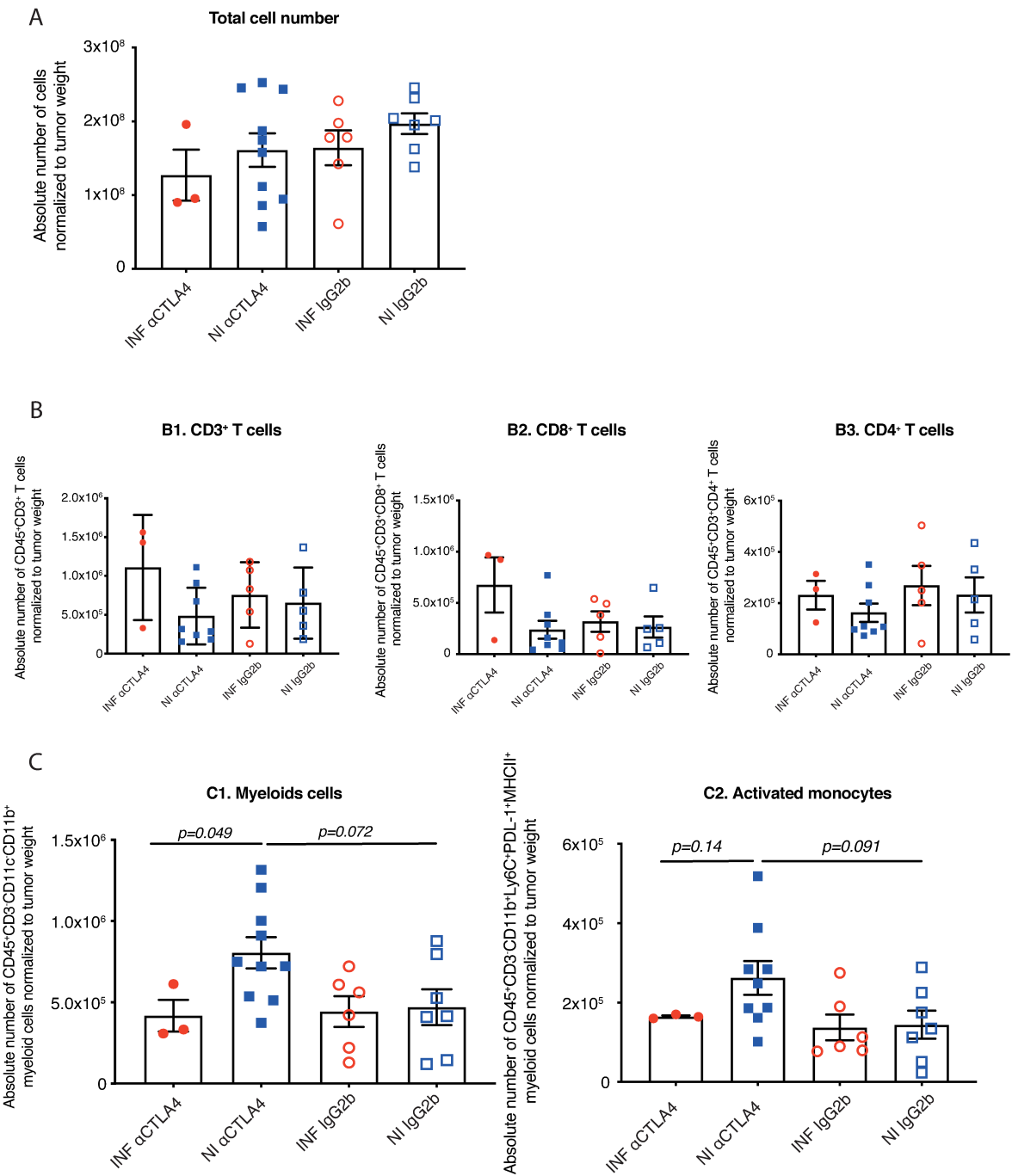


Supplementary figure 5. Cell Counts



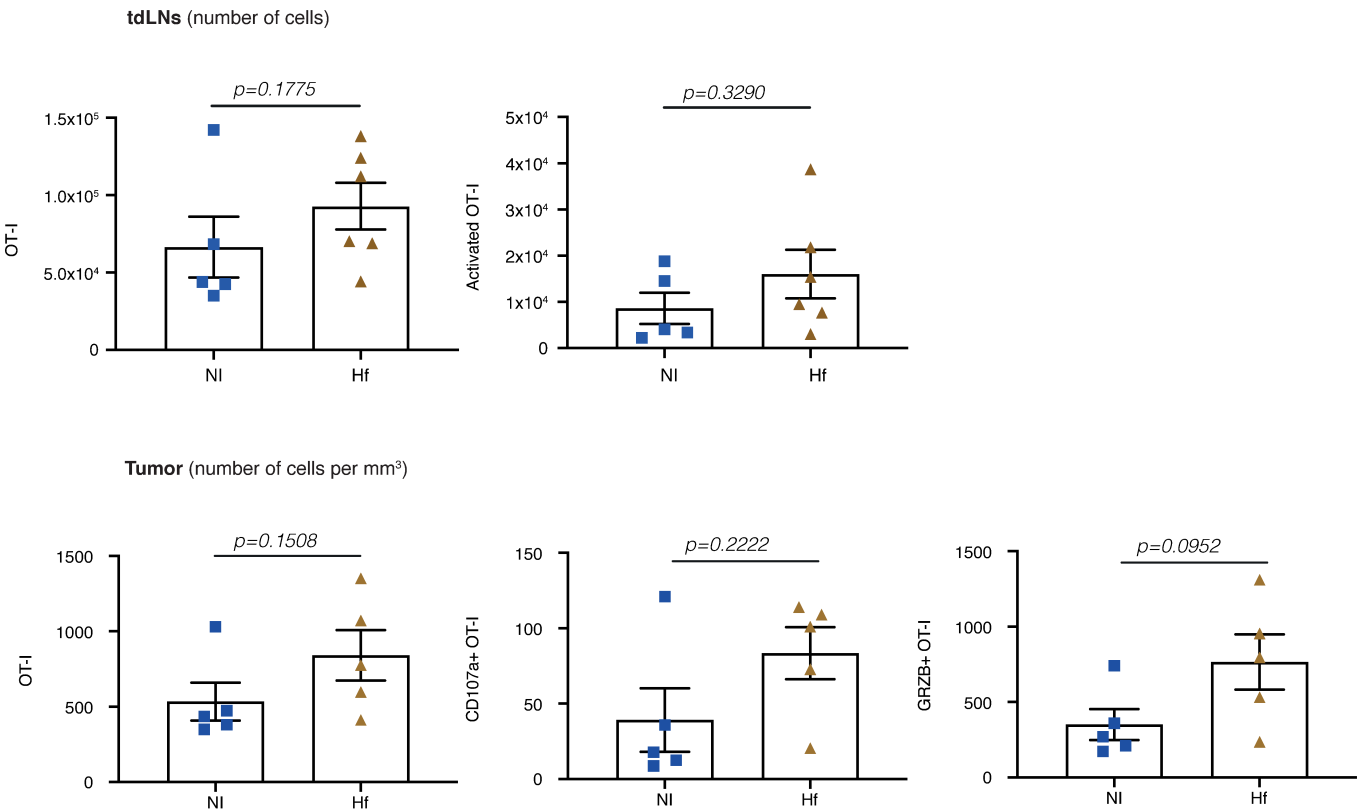


Supplementary figure 7. MC38 Tumor-bearing mice

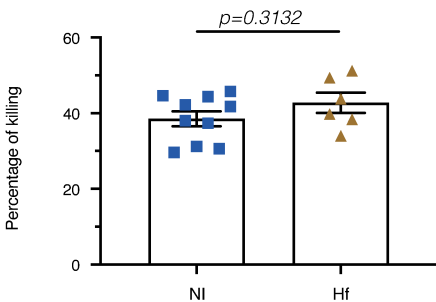


Supplementary figure 8.
H. pylori substantially affects tumor myeloids cells in MC38 tumor-bearing mice undergoing anti-CTLA4 immunotherapy.

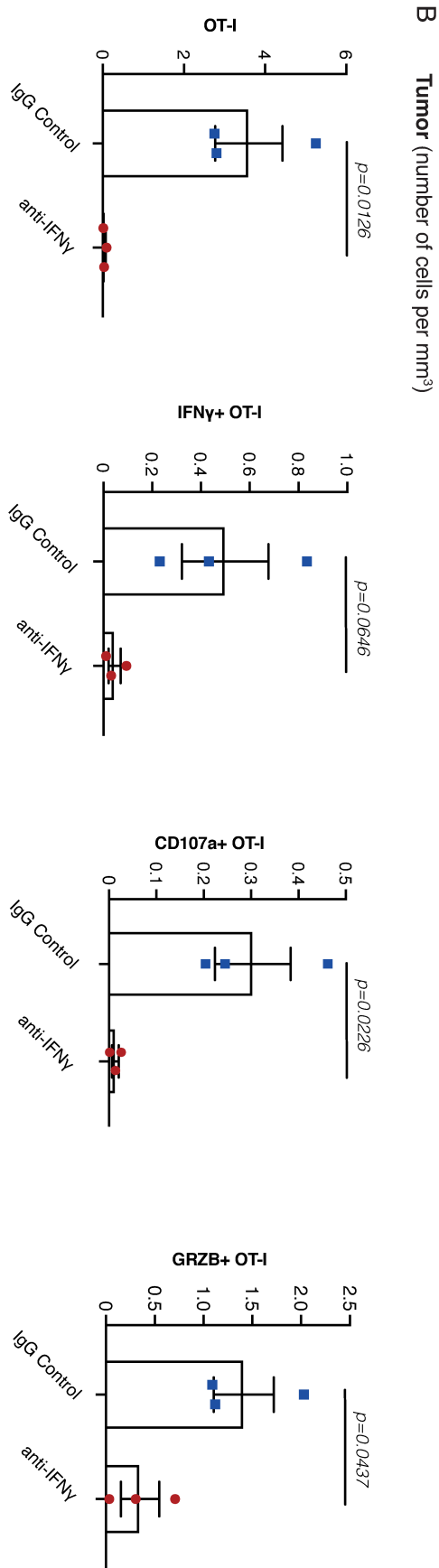
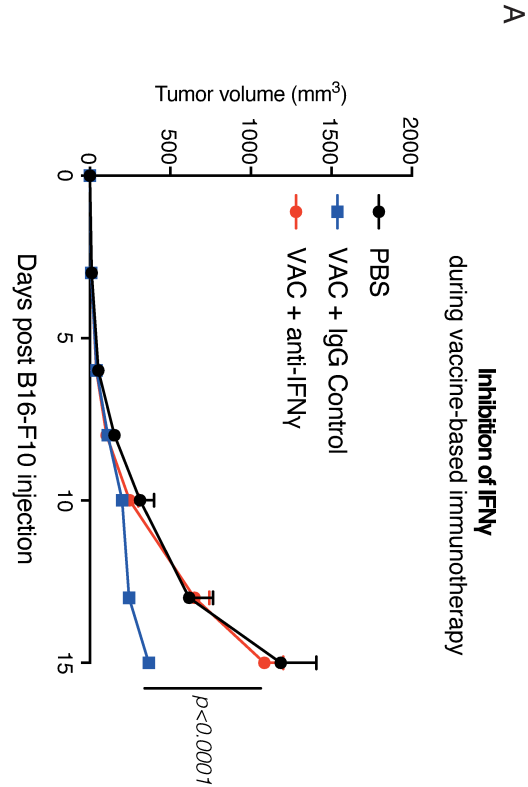
A **Absolute number and activation status of OT-I cells**



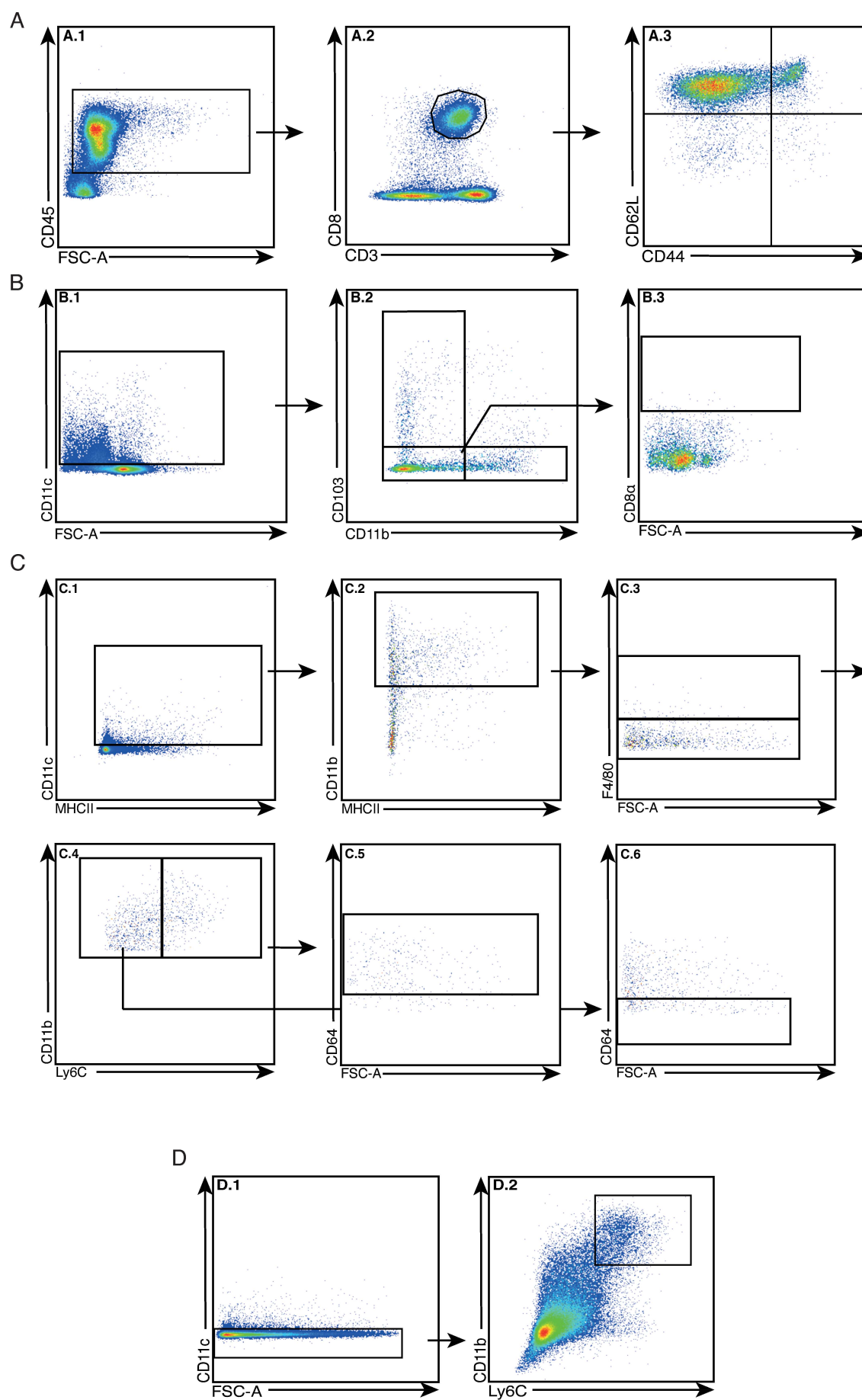
B **Vaccine-induced cytotoxic activities of OT-I cells**



Supplementary figure 9. *H. felis* infection does not jeopardize the tumor specific immune response



Supplementary figure 10. Effect of neutralization of IFN γ on the efficacy of vaccine-based cancer immunotherapy



Supplementary figure 11. Gating strategy

Supplementary table 1. Summary of clinical characteristics of the Dijon cohort

Variable		
Sexe-no.(%)	Female	14 (24)
	Male	45 (76)
Age-yr (median, IQR)		66 (13)
WHO performance status-no.(%)	0	26 (44)
	1	31 (52)
	2	2 (1)
Histology-no.(%)	Nonsquamous-cell	34 (59)
	Squamous-cell	24 (41)
	NA	2
Stage-no.(%)	IIIB	8 (14)
	IV	51 (86)
Smoker-no.(%)	No	6 (10)
	Yes	53 (90)

Univariate and multivariate Cox models for overall survival

Features		Univariate			Multivariate		
		HR	95%CI	p-value	HR	95%CI	p-value
Age		0.98	0.94-1.02	p=0.420	0.98	0.93-1.03	p=0.344
Gender	Female	-			-		
	Male	1.16	0.53-2.56	p=0.711	0.87	0.36-2.12	p=0.765
WHO PS	0	-			-		
	≥1	1.00	0.52-1.93	p=0.999	1.19	0.56-2.52	p=0.658
Histology	Non squamous	-			-		
	Squamous	1.22	0.62-2.40	p=0.556	0.94	0.43-2.08	p=0.879
Smoker	Never	-			-		
	Ever	1.28	0.45-3.65	p=0.642	1.21	0.34-4.32	p=0.774
Stage	IIIB	-			-		
	IV	0.60	0.24-1.49	p=0.271	0.66	0.20-2.14	p=0.491
H.p status	Seronegative	-			-		
	Seropositive	3.35	1.69-6.66	p=0.001	3.71	1.77-7.77	p=0.001

H.p : Helicobacter pylori; WHO PS: World Health Organisation (WHO) performance status

Univariate and multivariate Cox models for progression free survival

Features		Univariate			Multivariate		
		HR	95%CI	p-value	HR	95%CI	p-value
Age		0.95	0.92-0.98	p=0.005	0.94	0.90-0.98	p=0.003
Gender	Female	-			-		
	Male	0.58	0.30-1.11	p=0.102	0.74	0.34-1.60	p=0.440
WHO PS	0	-			-		
	≥1	0.85	0.48-1.53	p=0.595	0.88	0.46-1.70	p=0.713
Histology	Non squamous	-			-		
	Squamous	1.36	0.76-2.43	p=0.304	1.76	0.87-3.54	p=0.115
Smoker	Never	-			-		
	Ever	0.62	0.26-1.47	p=0.277	0.50	0.17-1.45	p=0.203
Stage	IIIB	-			-		
	IV	1.41	0.60-3.33	p=0.432	1.07	0.40-2.84	p=0.899
H.p status	Seronegative	-			-		
	Seropositive	1.39	0.75-2.59	p=0.292	1.51	0.80-2.84	p=0.201

H.p : Helicobacter pylori; WHO PS: World Health Organisation (WHO) performance status

Supplementary table 2. Summary of clinical characteristics of the Montreal cohort

Features		N = 29
Age-yrs	Median (IQR)	65 (46-79)
Sex	Female	16 (55%)
	Male	13 (45%)
Smoking habits	Never	1 (3%)
	Former or current	28 (97%)
Obesity (kg/m ²)	Median (IQR)	25.7 (15.5-37.5)
ECOG	0	14 (48%)
	1-2	15 (52%)
Histology	Adenocarcinoma	21 (72%)
	Squamous-cell	7 (25%)
	NSCLC	1 (3%)
Stage	3A	3 (10%)
	3B	4 (14%)
	4	22 (76%)
PD-L1 expression	<1%	7 (24%)
	1-49%	7 (24%)
	>50%	13 (45%)
	Unknown	2 (7%)
Prior chemotherapy	No	15 (52%)
	Yes	14 (48%)
ICB	Atezolizumab	2 (7%)
	Durvalumab	2 (7%)
	Durvalumab/Tremelimumab	5 (17%)
	Nivolumab	4 (14%)
	Nivolumab/Pembrolizumab	1 (3%)
	Pembrolizumab	13 (46%)
	Pembrolizumab/Chemotherapy	1 (3%)
	Pembrolizumab/Tremelimumab	1 (3%)
Progression-free survival	Median [95%CI]	4.4 [2.7-10.8]

Univariate and multivariate Cox models for overall survival

Features		Univariate			Multivariate		
		HR	95%CI	p-value	HR	95%CI	p-value
Age		0.97	0.91-1.03	0.25	0.95	0.88-1.02	0.16
Sex	Female		-			-	
	Male	0.83	0.29-2.33	0.72	0.31	0.06-1.75	0.18
ECOG	0		-			-	
	≥1	0.90	0.32-2.50	0.84	0.60	0.16-2.29	0.45
Histology	ADK		-			-	
	EPI	1.27	0.40-4.02	0.68	2.97	0.43-20.7	0.27
Stage	IIIA-IIIB		-			-	
	IV	2.37	0.53-10.52	0.26	2.04	0.43-9.68	0.37
H.p status	Seronegative		-			-	
	Seropositive	1.73	0.58-5.19	0.14	2.30	0.55-9.59	0.25

Univariate and multivariate Cox models for progression free survival

Features		Univariate			Multivariate		
		HR	95%CI	p-value	HR	95%CI	p-value
Age		1.00	0.95-1.05	0.99	0.96	0.90-1.04	0.31
Sex	Female		-			-	
	Male	1.10	0.49-2.45	0.82	0.37	0.11-1.23	0.10
ECOG	0		-			-	
	≥1	0.68	0.31-1.53	0.35	0.57	0.15-2.16	0.40
Histology	ADK		-			-	
	EPI	1.71	0.68-4.32	0.26	3.23	0.79-13.2	0.10
Stage	IIIA-IIIB		-			-	
	IV	1.81	0.71-4.59	0.21	2.60	0.86-7.86	0.09
H.p status	Seronegative		-			-	
	Seropositive	2.39	1.01-5.65	0.048	3.53	1.05-11.8	0.04