

CHARACTERIZATION OF TUMOR INFILTRATING LYMPHOCYTES IN RESECTABLE EARLY-STAGE NON-SMALL CELL LUNG CANCER

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DISCLOSURE SLIDE

The authors have no financial or commercial interests to disclose

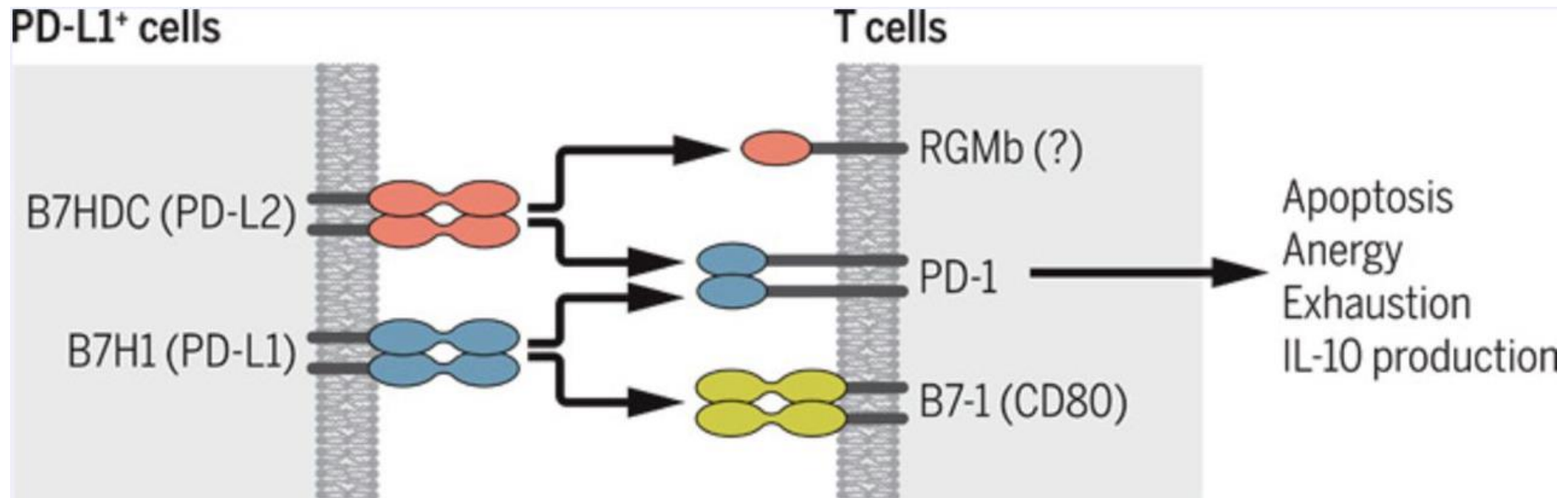
NON-SMALL CELL LUNG CANCER (NSCLC)

- Leading cause of cancer deaths worldwide⁽¹⁾
- Platinum-based doublet chemotherapy in advanced metastatic disease
- ‘Non-immunogenic’ tumor
- Immune checkpoint pathway and adaptive resistance mechanisms

1. *CA Cancer J. Clin.* 64(1), 9-29: 2014

IMMUNE CHECKPOINT PATHWAY: DOMINATE ROLE IN T CELL SUPPRESSION

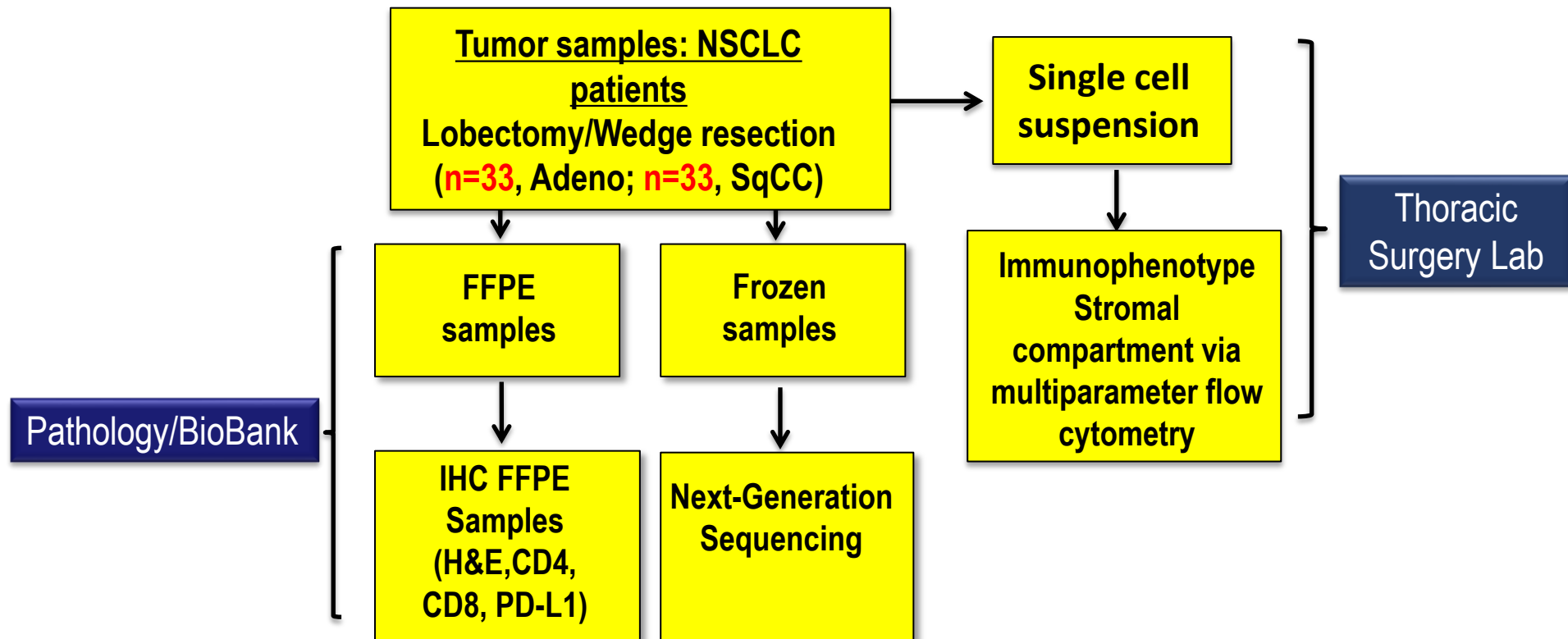
Protects from over-exuberant T cell responses



Zou et al. Science Transl. Med. 2016 (8) 328

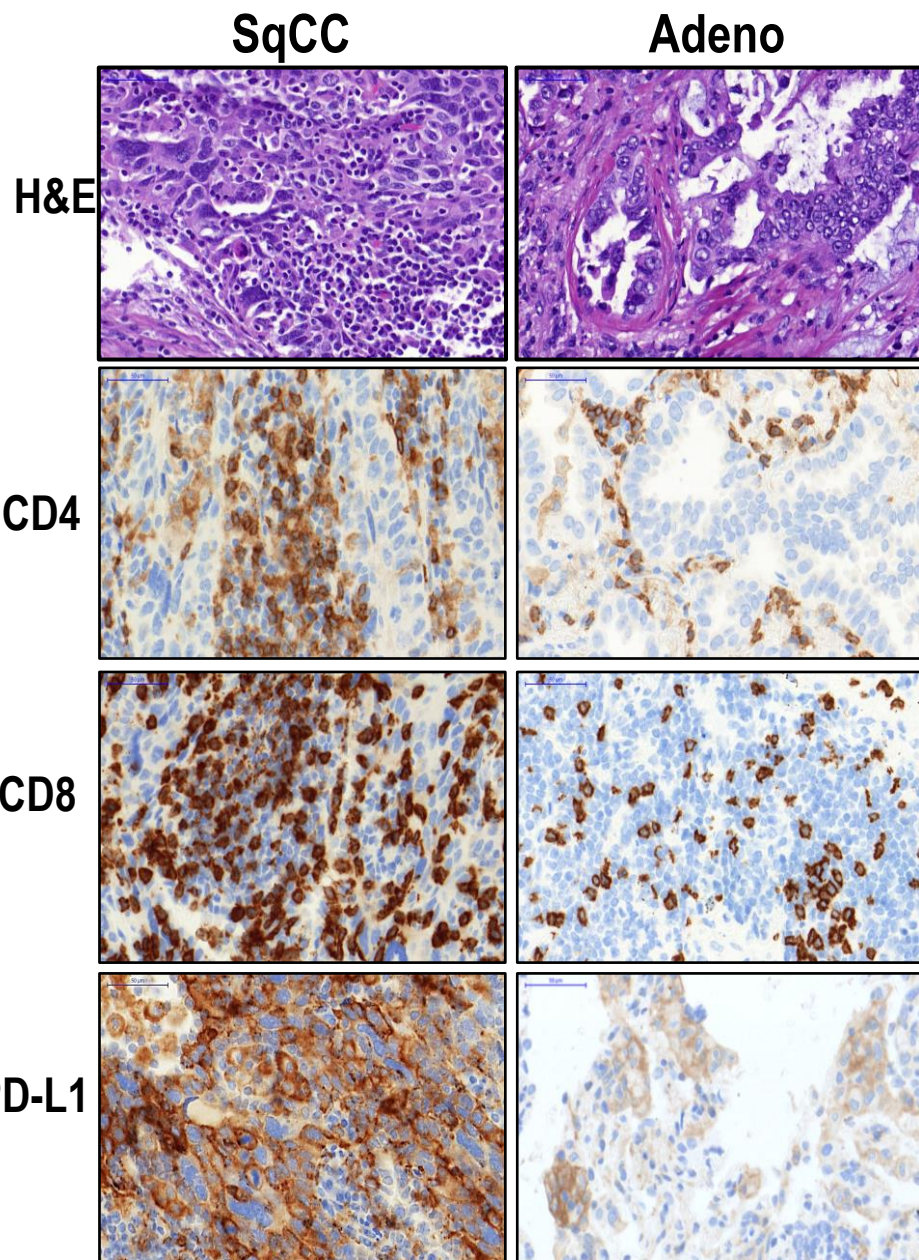
High levels of PD-1 TILs in various cancer types

Aim: Immunophenotype TILs in resectable early-stage NSCLC



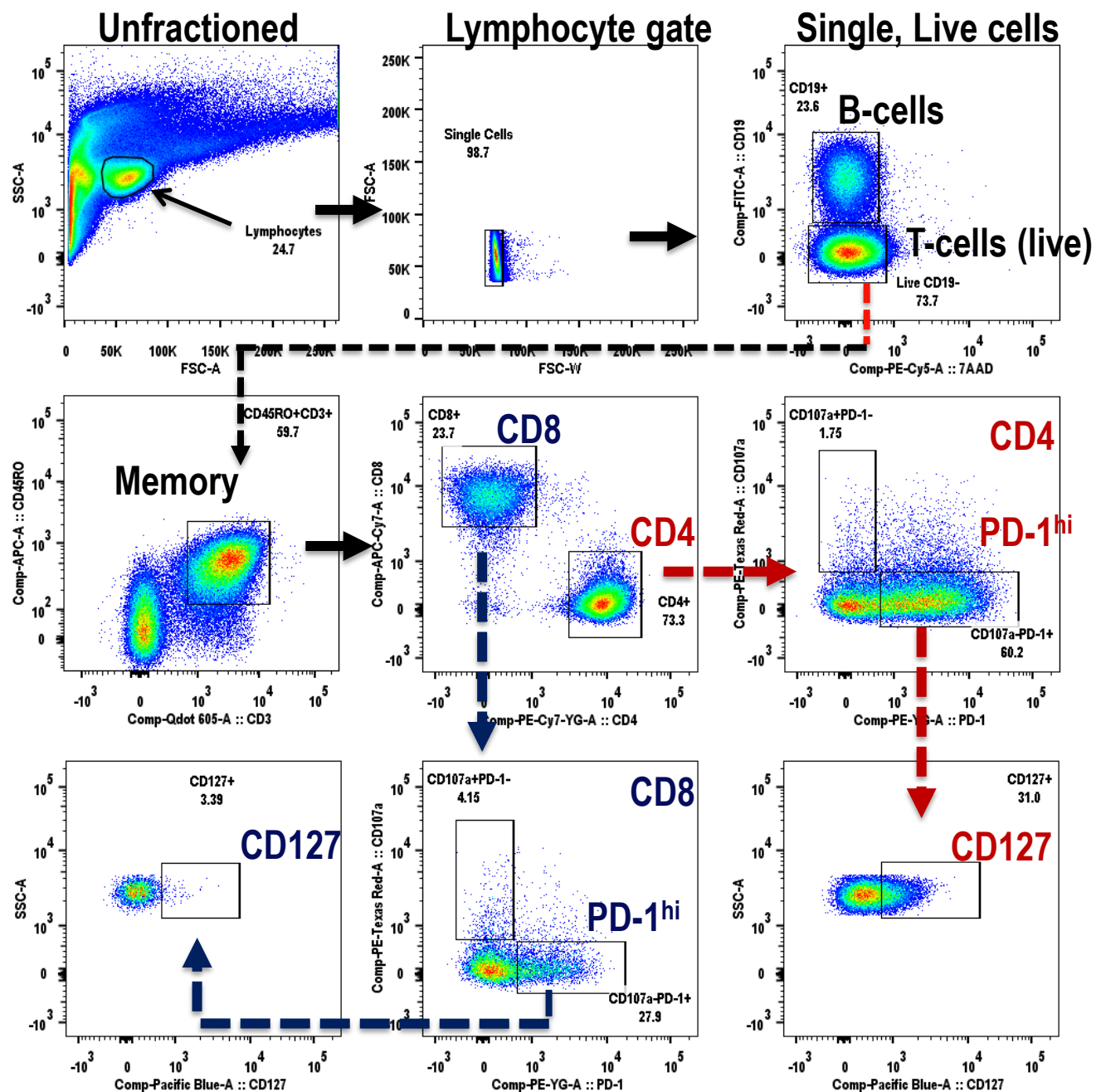
Pipeline showing workflow study design

Characteristic	Value
Age –yr	
Median	64
range	48-84
Sex - no. (%)	
Female	26 (40)
male	40 (60)
Smoke status – no. (%)	
Smoker	42 (64)
Never smoker	10 (15)
Not reported	14 (21)
Tumor Type – no. (%)	
NSCLC	
Adeno	33 (50)
Squamous	33 (50)
Tumor Grade – no. (%)	
None	10 (15)
G2	26 (39)
G3	30 (45)
G4	0 (0)
Tumor Stage – no. (%)	
IA	14 (21)
IIA	10 (15)
IIIA	19 (29)
IB	11 (17)
IIB	8 (12)
IV	2 (3)
none	2 (3)
Prior Tx – no. (%)	
Yes	10 (15)
No	56 (85)



TIL

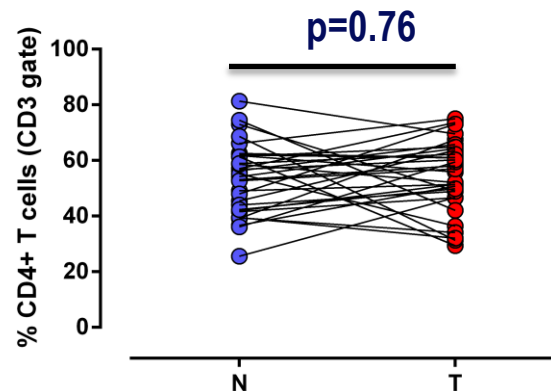
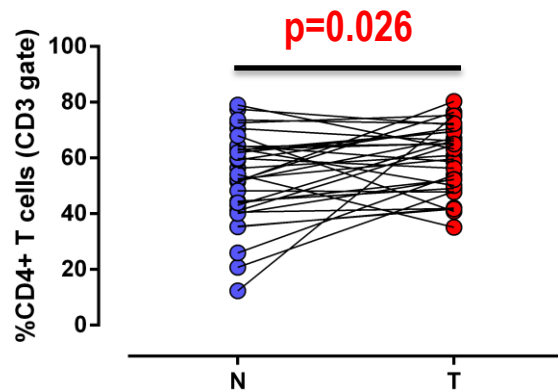
Immunophenotype



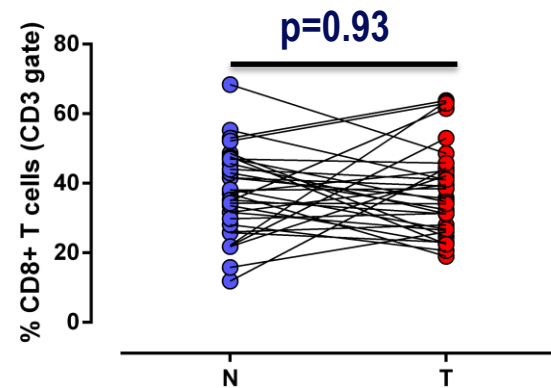
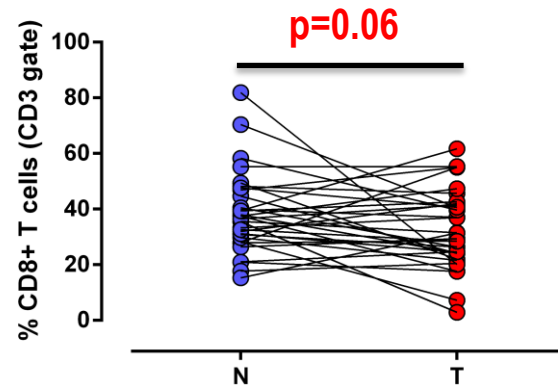
Adeno

SqCC

CD4+

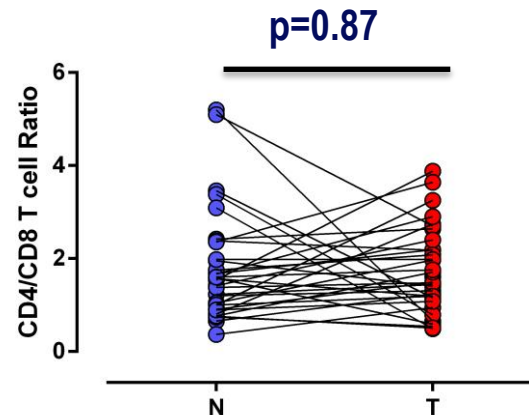
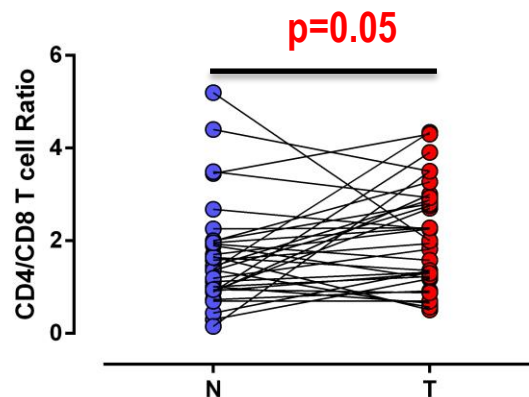


CD8+



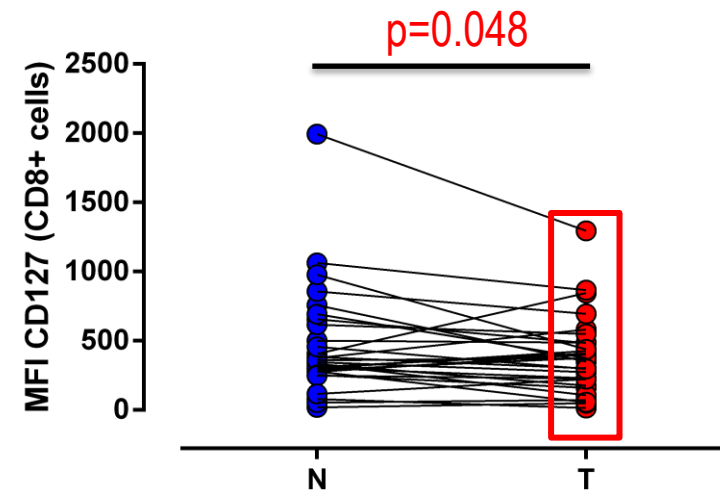
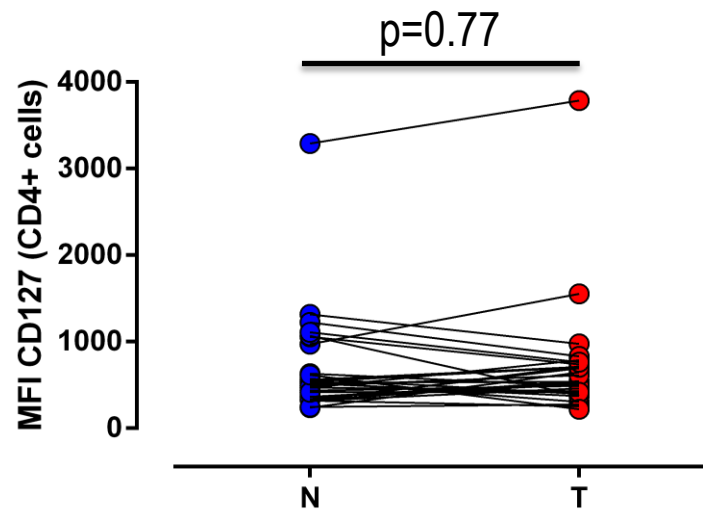
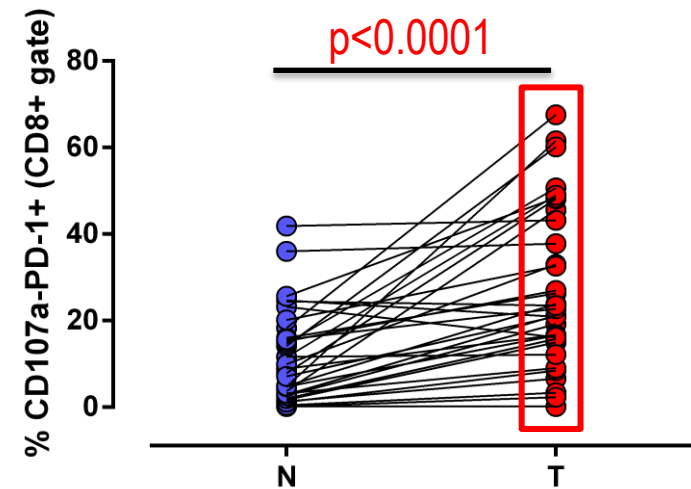
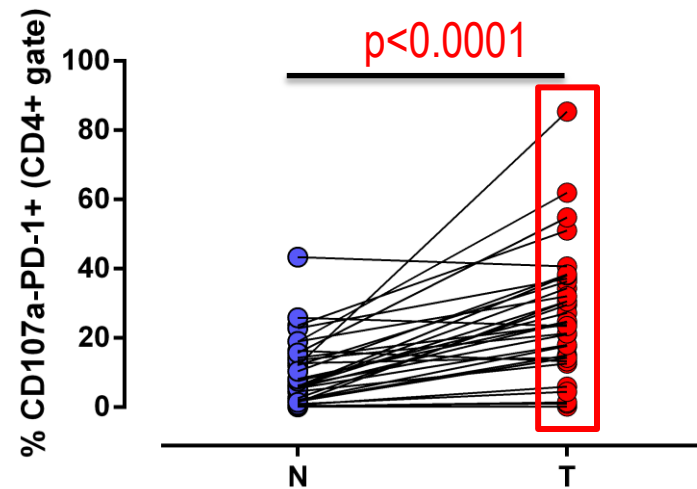
➤ Increased infiltration
of CD4+ T cells in
Adenocarcinoma

CD4/CD8



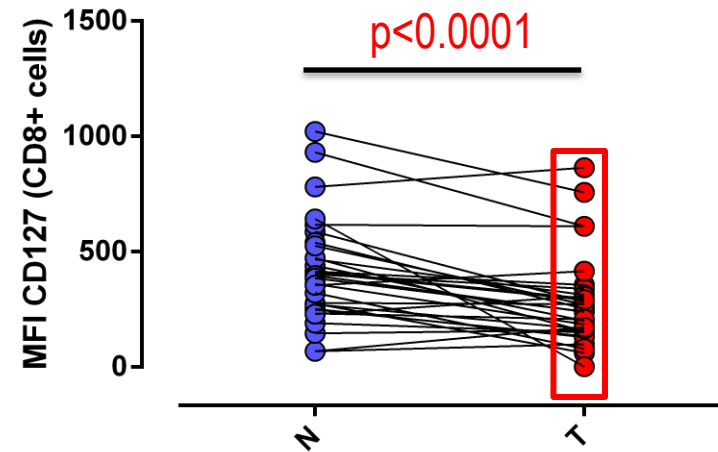
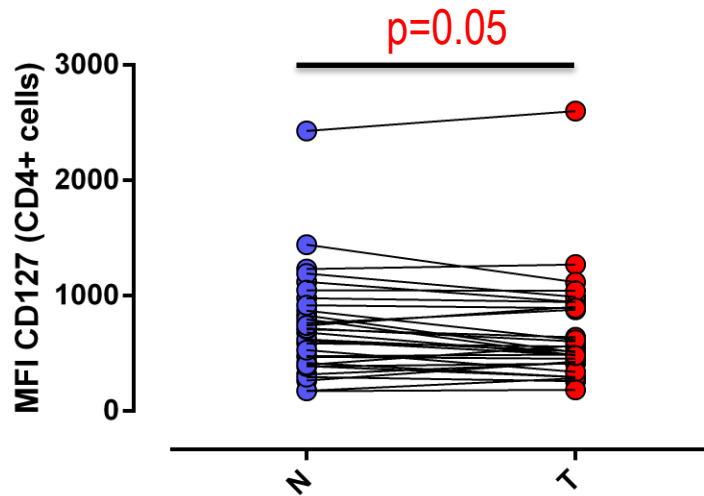
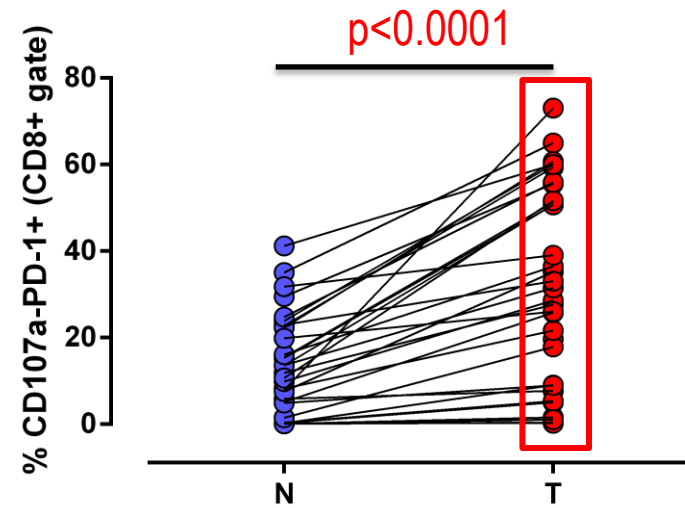
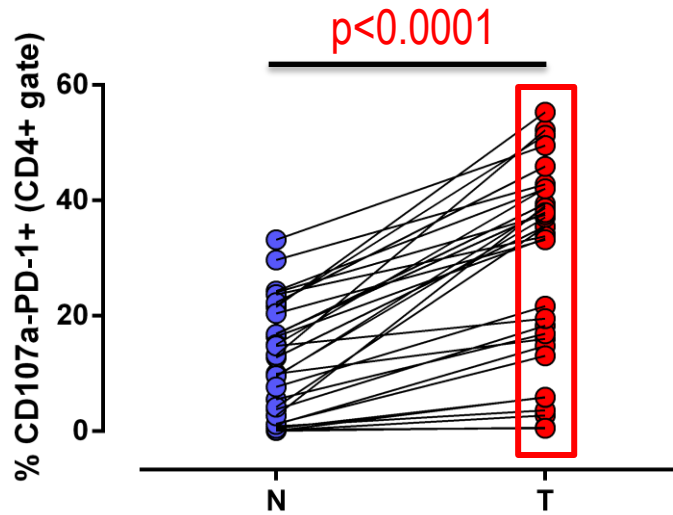
➤ Subpopulations of TILs
are not altered in
Squamous cell carcinoma

TIL subpopulations: Evidence of exhaustion in Adenocarcinoma



Adenocarcinoma, N=33, paired t-test, two sided

TIL subpopulations: Evidence of exhaustion in Squamous cell carcinoma



Squamous, N=33, paired t-test, two sided

Resectable, early-stage NSCLC

- Impaired infiltration of TILs
- Decrease in CD8+ TILs whereas CD4+ TILs increased in Adenocarcinoma
- PD-1^{hi} TILs show phenotypic markers of exhaustion
- B cells and PD-1

WHERE DO WE GO FROM HERE?

- PD-1^{hi} TILs, tumor-specific antigens and mutational load
- PD-1 inhibition with targeted, chemo- and radiation therapy

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