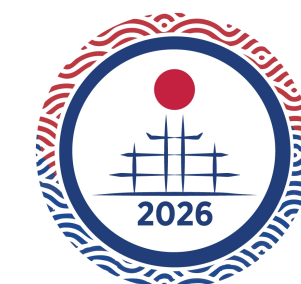




P2.194. Serial Blood Cytof Identifies a B-cell-high/MDSC-low State Linked to Durable Benefit From Sintilimab Plus Anlotinib in Non-Small Cell Lung Cancer (NSCLC)

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IASLC 2026 World
Conference on Lung Cancer

SEPTEMBER 12 - 15, 2026
SEOUL, REPUBLIC OF KOREA

INTRODUCTION

Background: Blood-based biomarkers for first-line chemo-free PD-1 plus antiangiogenic therapy in advanced NSCLC remain undefined.

Objective: Use serial mass cytometry to identify peripheral immune features associated with durable benefit from sintilimab plus anlotinib.

Clinical need: Use baseline blood phenotypes to guide prospective biomarker validation.

METHODS

Patients: Advanced/metastatic driver-negative NSCLC treated with first-line sintilimab plus anlotinib.

Samples: 60 serial peripheral blood samples from 19 patients.

Assay: 35-marker CyTOF in the CD45+CD66b-compartment with unsupervised PARC clustering.

Response groups: Durable clinical benefit (DCB; n=12) versus no durable benefit (NDB; n=7) across baseline, on-treatment and progression timepoints.

Timepoints: Baseline, early on-treatment, later on-treatment and progression.

Analysis workflow



KEYS

19

patients

60

serial samples

35

CytoF markers

12/7

DCB/NDB

Study question: Can a peripheral immune state measured before treatment nominate patients more likely to achieve durable clinical benefit?

Analytic frame: Cluster frequencies were compared between DCB and NDB across baseline, on-treatment and progression timepoints.

Clinical setting: First-line sintilimab plus anlotinib in advanced driver-negative NSCLC.

Key messages

Longitudinal design: Serial blood sampling allows baseline signals and progression-state changes to be evaluated together.

Biomarker direction: A B-cell-high/MDSC-low state marks durable benefit in this exploratory cohort.

Poster focus: Lead with the immune-state signature, then show the heatmap and cluster-frequency evidence.

Keywords

NSCLC

Mass cytometry

Circulating
biomarkers

INTERPRETATION

Actionable take-away

Peripheral blood CyTOF can nominate a candidate immune-state biomarker for durable benefit.

Signal pattern

DCB was linked to baseline B-cell enrichment and lower MDSC frequency.

Next step

Prospectively validate the B-cell-high/MDSC-low signature and evaluate serial immune monitoring.

LIMITATIONS

Caution: The cohort is small and exploratory, so findings should be interpreted as hypothesis-generating.

Validation: Prospective studies should test the B-cell-high/MDSC-low signature before treatment selection use.

Clinical relevance: Serial immune monitoring may help stratify benefit from sintilimab plus anlotinib.

IMPLICATIONS

Predictive direction: Baseline B-cell enrichment together with lower MDSC frequency defines the leading candidate immune-state signature.

Longitudinal value: Progression-associated DC/APC-like changes suggest that serial blood profiling captures dynamic immune remodeling.

Clinical translation: The signal is best positioned for prospective validation before treatment-selection use.

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RESULTS

A baseline B-cell-high/MDSC-low peripheral immune state was associated with durable benefit.

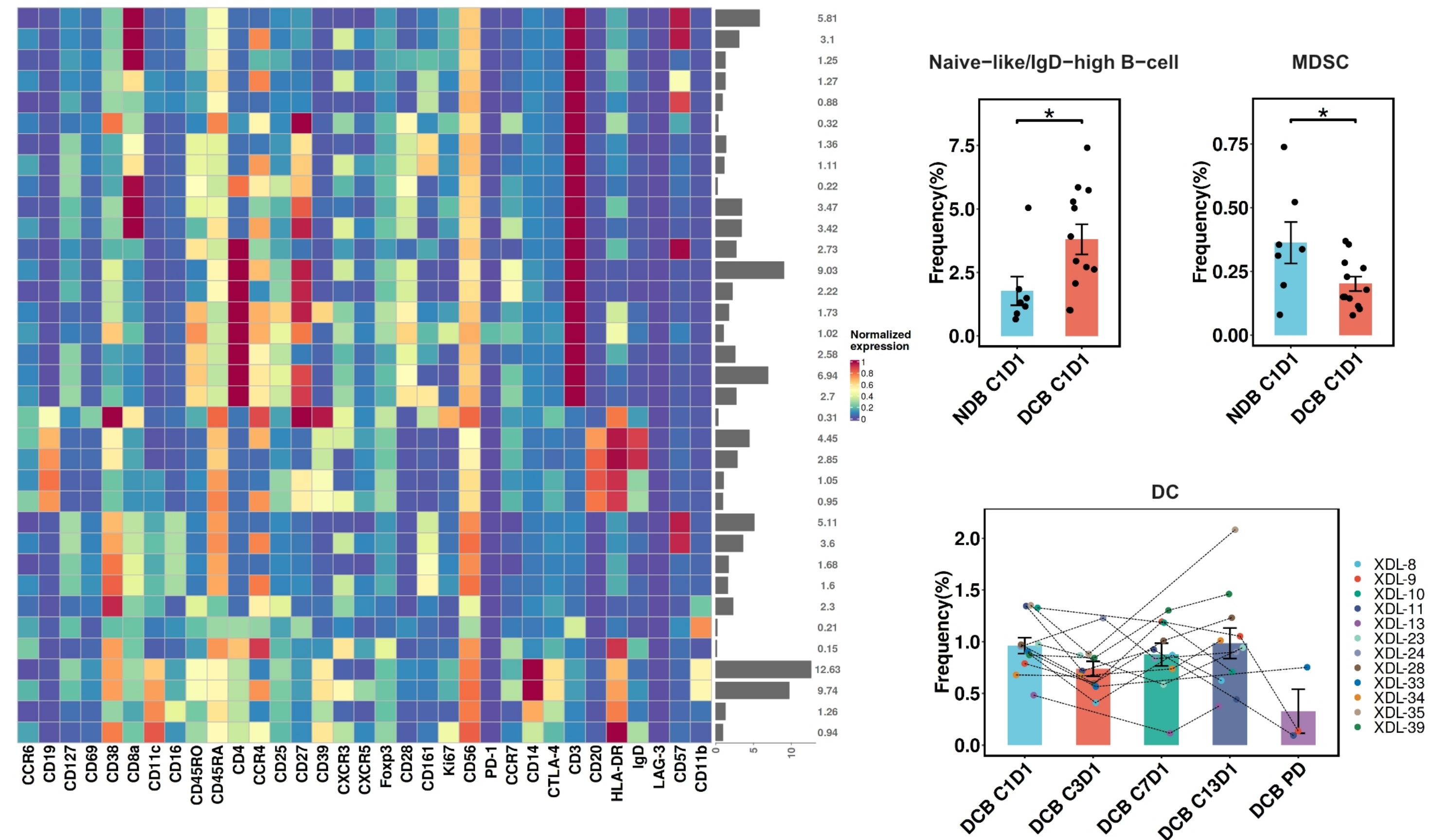
B-cell-high

Naive-like/IgD-high B cells:
3.80% vs 1.77%, P=0.036

MDSC-low

MDSC cluster:
0.20% vs 0.36%, P=0.037

Figure 1



Primary signal pattern

Feature	Timepoint	Pattern	Estimate
Naive-like/IgD-high B cells	Baseline	DCB higher	3.80% vs 1.77%; P=0.036
MDSC cluster	Baseline	DCB lower	0.20% vs 0.36%; P=0.037
Activated/memory-like B cells	Baseline	Trend higher	1.68% vs 0.97%; P=0.071
DC/APC-like cluster	Progression	Decreased in DCB	0.33% vs 0.96%; P=0.0044

NDB showed higher global activation/proliferation signals including CD25, CD69 and Ki67, supporting immune-state differences beyond single cluster frequencies.

Conclusion: Serial blood CyTOF identified a baseline B-cell-high/MDSC-low immune state associated with durable benefit, with dynamic DC/APC-like remodeling at progression.