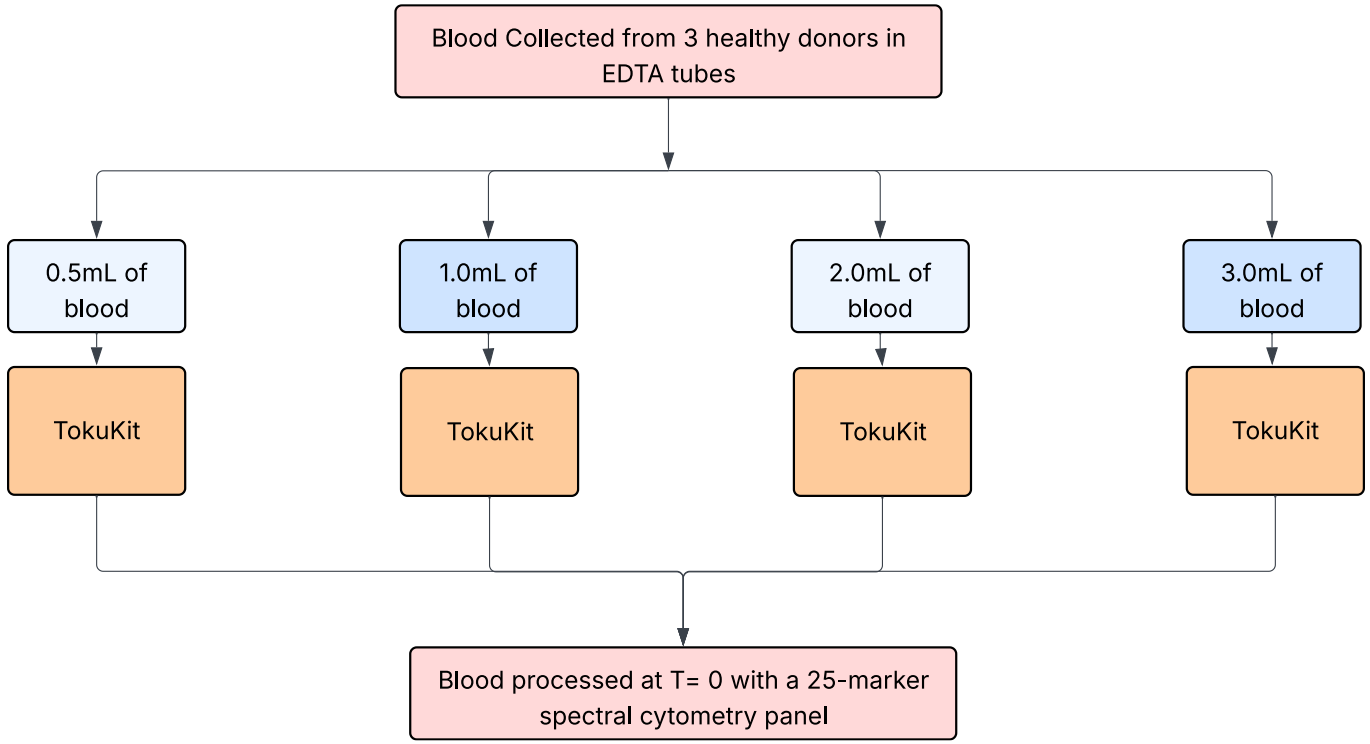
Does Blood Volume Affect Immune Cell Preservation with TokuKit?

This study shows that regardless of blood inputs from from 0.5 mL to 3 mL,TokuKit preserved immune cell populations within ±2% of the standard 2 mL blood volume.

Experimental Design



Experimental Design

1

Sample Collection

Whole blood was collected from **3 healthy donors** into EDTA tubes and processed with **TokuKit at 4 volumes: 0.5, 1, 2, and 3 mL.**

2

Timeline

Samples were processed at T = 0 and analyzed immediately after.

3

Red Blood Cell Lysis

Since TokuKit contains its own **lysis buffer**, no additional ACK or BD lysis step was required.

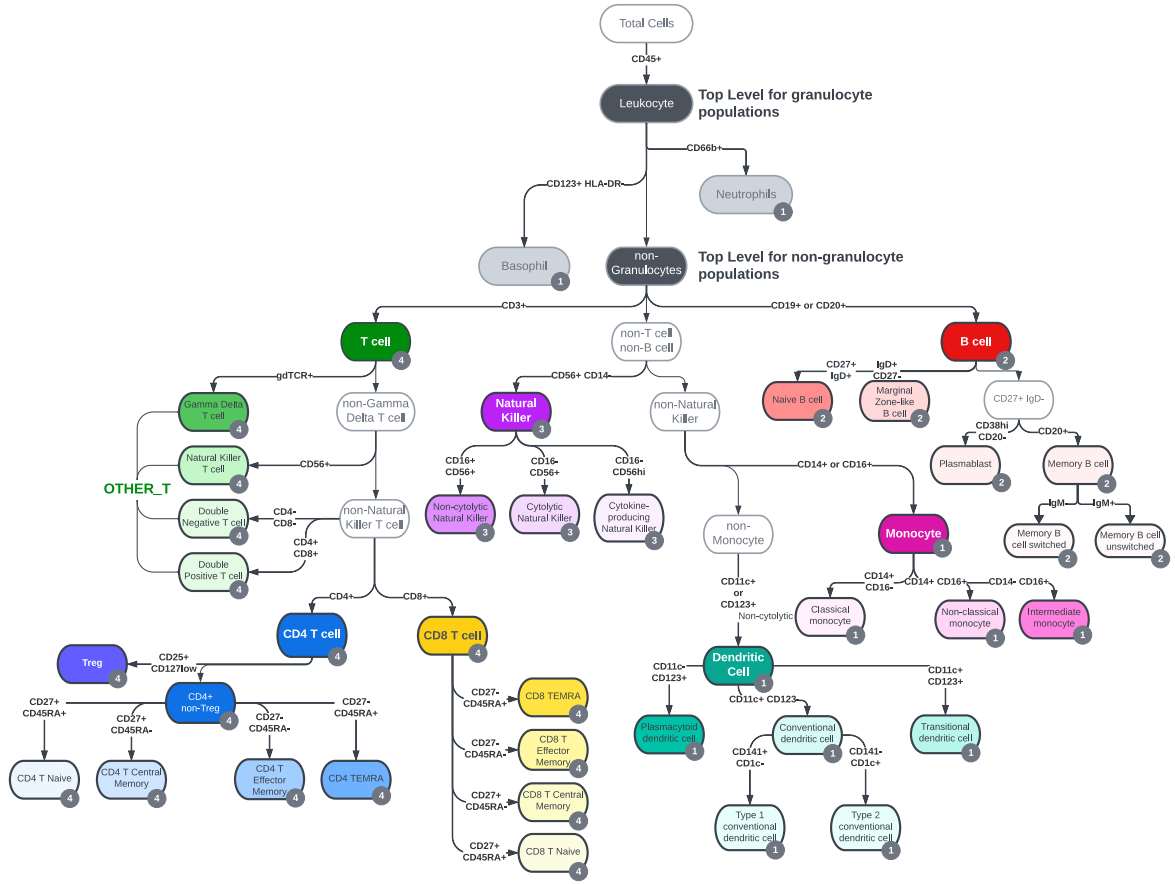
4

Instrument

Cytometry analysis was performed on a **Cytek® Aurora**.

Panel Design

A **25-marker spectral flow cytometry panel** was applied to assess the immune cell populations visualized in the gating strategy displayed.



Lower blood volumes did not impact cell population frequencies

95% of immune populations

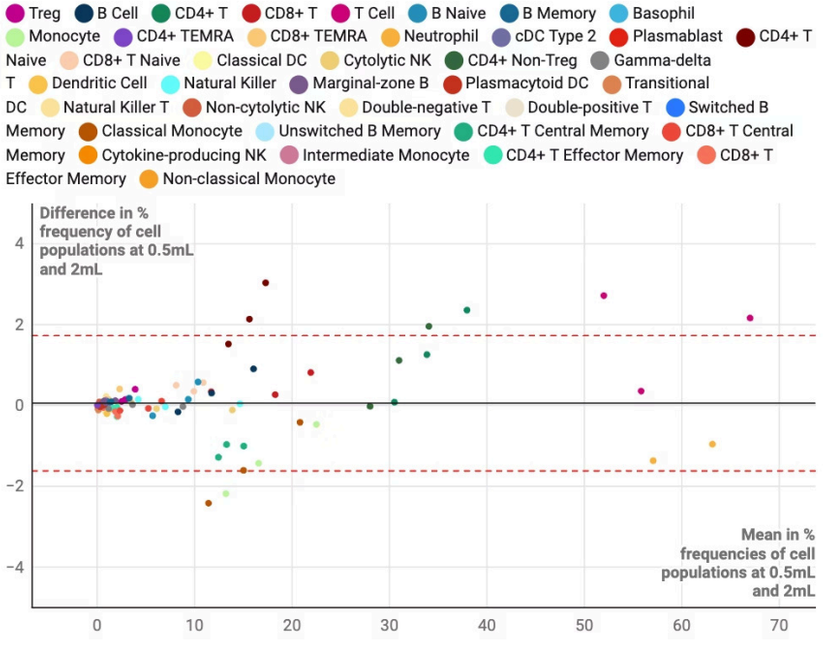
had stable frequencies across volumes (≥ 2 of 3 donors within ± 2%)

<0.1 mean difference

virtually no systematic shift between volumes (0.5 mL or 2 mL)

4 conditions

4 blood volume conditions were tested



Higher blood volumes did not impact cell population frequencies

95% of immune populations

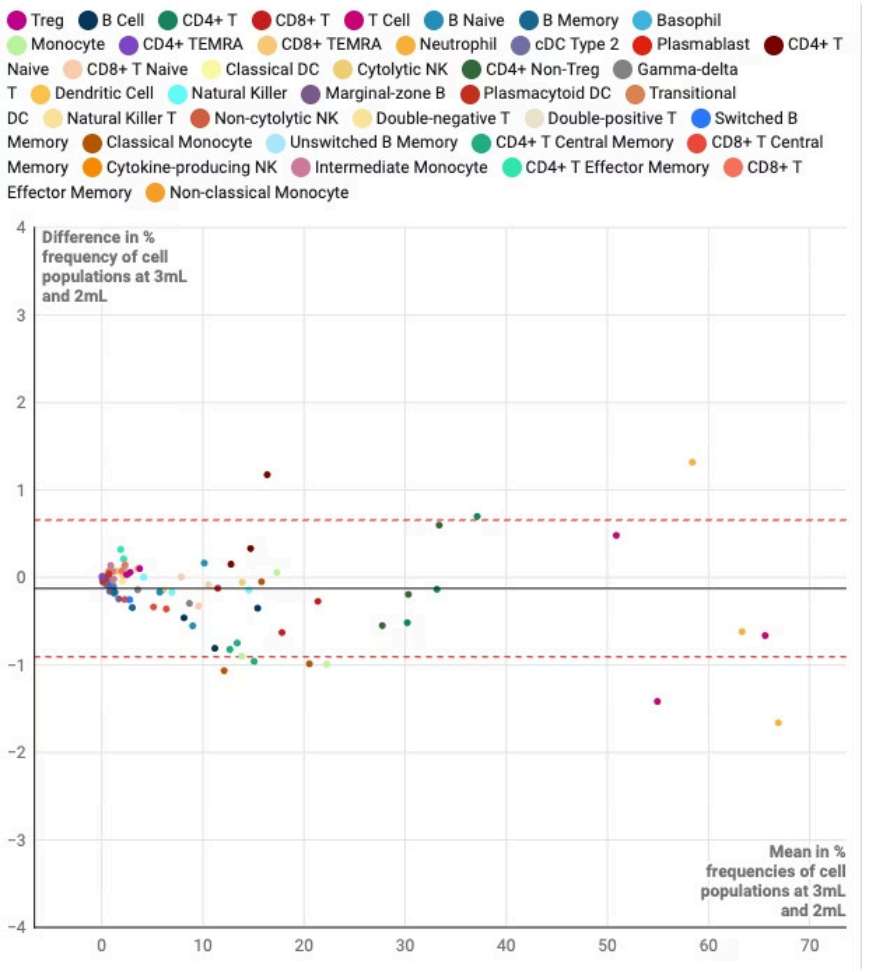
had stable frequencies across volumes (≥ 2 of 3 donors within ± 1%)

<0.2 mean difference

virtually no systematic shift between volumes (0.5 mL or 2 mL)

4 conditions

4 blood volumes conditions were tested



Why Sample Preservation Matters

Degradation distorts patient immune profiles

When preservation methods degrade or introduce artifacts, immune profiles shift, creating results that reflect preservation instability rather than a patient's true biology.

Failed samples waste time and budget

Degraded samples often fail QC, requiring costly redraws, repeat shipments, and delays in data delivery.

Inconsistencies undermine PD insights

Differences in how long samples sit before processing introduce noise, making it harder to detect real pharmacodynamic signals, mechanism of action, or biomarkers of response.

Want to learn more?

Ask us about the results of our TokuKit blood volume study, and what studies with TokuKit are coming next: **info@teiko.bio**.