

1 μL末梢血からのリンパ球の分画および計測



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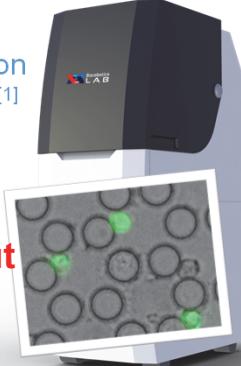
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血液1滴から行う白血球の全数検査!

Cell Sorter & Cell Imaging

Rare Cell Sorter

Single Rare Cell Isolation and Collection System^[1]



- ✓ Rapid
- ✓ High Throughput
- ✓ Damage Less
- ✓ Cell Imaging

Immune System

Leukocytes

Lymphocytes : 20-25%
Monocytes : 3-8%
Basophils : 0.5-1%
Neutrophils : 60-70%
Eosinophils : 2-4%

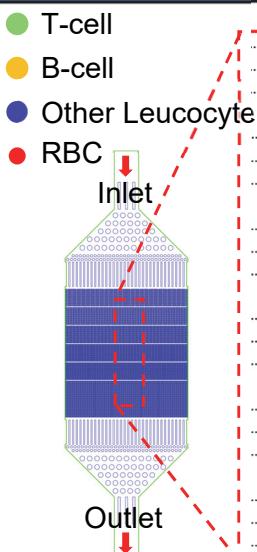


➤ Cell-mediated immunity: T-cell
➤ Humoral immunity: B-cell

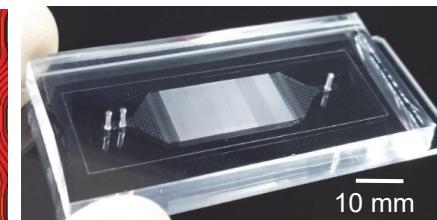
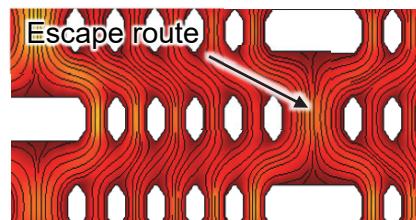
Characterization:

Immunodeficiency and Autoimmune diseases,
Cancer, HIV, leukemia and so on...

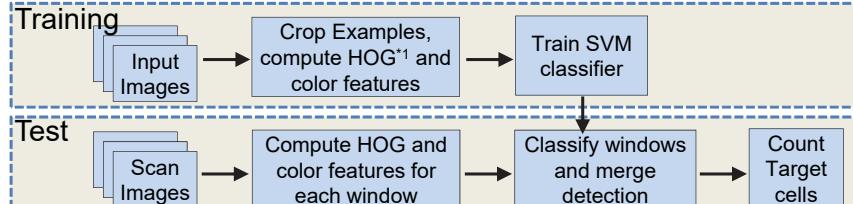
Whole Blood Cell Separation & Detection



Clogging-free microfluidic device

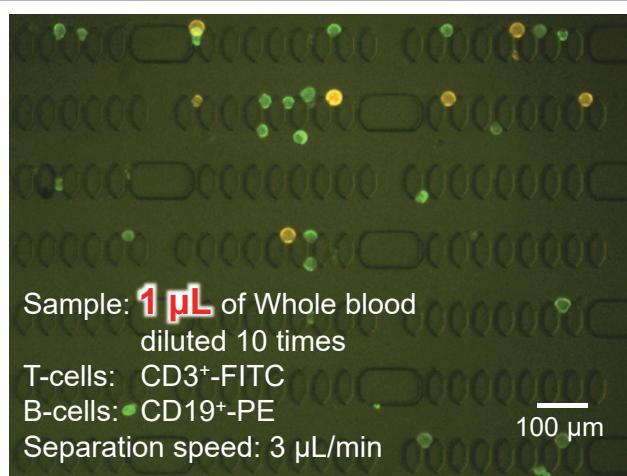


Cell identification



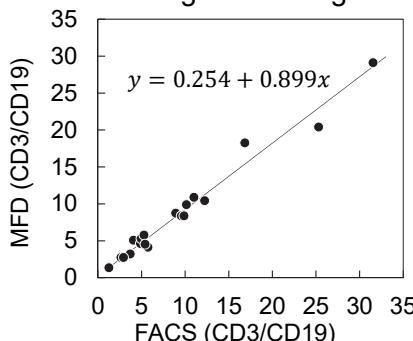
*1 HOG: Histogram of Oriented Gradients

Microfluidic Device vs. Flow Cytometry^{*2}

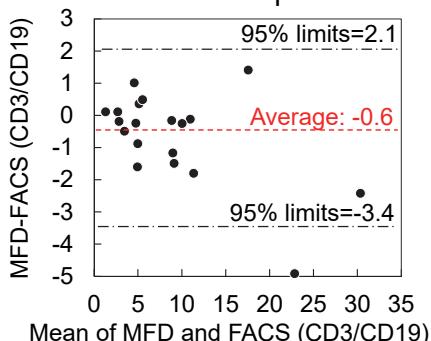


*2 Flow cytometry used FACS Cant II (BD)

Passing-Bablok regression



Bland-Altman plot



Cell capture rate: 99.8%

Coefficient of variation: 2.77%

Pearson correlation coefficient (vs FACS): 0.987

References :

- [1] T Masuda, WE Song, H Nakanishi, F Arai, et al, Rare cell isolation and recovery on open-channel microfluidic chip, PLOS ONE, 2017.
- [2] 益田, AM Noor, W Lei, 堀尾, 斎藤, 宮田, 新井, 1 μL末梢血からのリンパ球の分画および計測, 36回化学とマイクロ・ナノシステム学会, 3P07

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