ON-CHIP MONITORING OF THE MEGAKARYOCYTE IN SHEAR FLOW ENVIONMENT

○Kazuya Tashiro[1], Shinya Sakuma[1], Keitaro Ito[1], Sou Nakamura[2]
Koji Eto[2] ,Toshio Fukuda[3], Fumihito Arai[1]
[1]Nagoya University, [2]Kyoto University, [3]Meijo University

Observation of the dynamic deformation of megakaryocytes

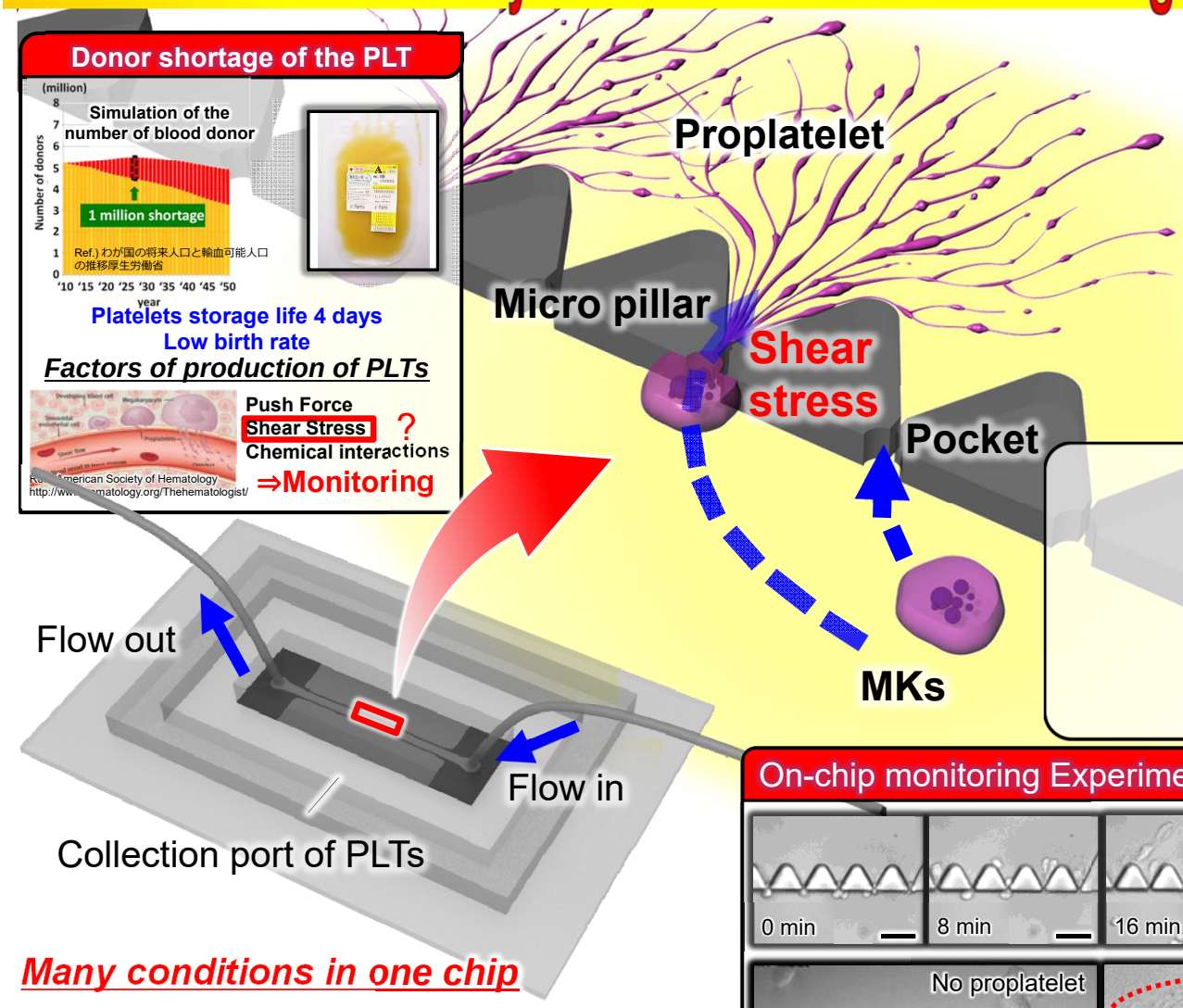
Donor shortage of the PLT

Platelets storage life 4 days
Low birth rate

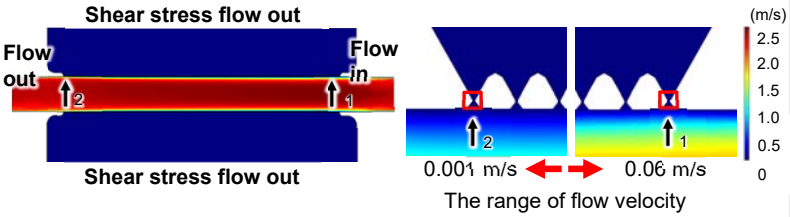
Factors of production of PLTs

Push Force
Shear Stress ?
Chemical interactions
⇒Monitoring

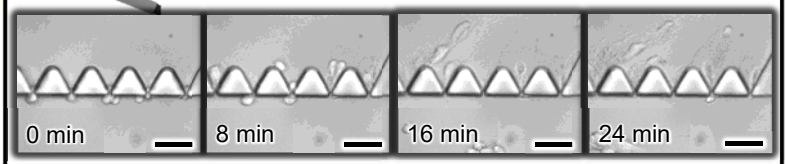
Production of the PLT

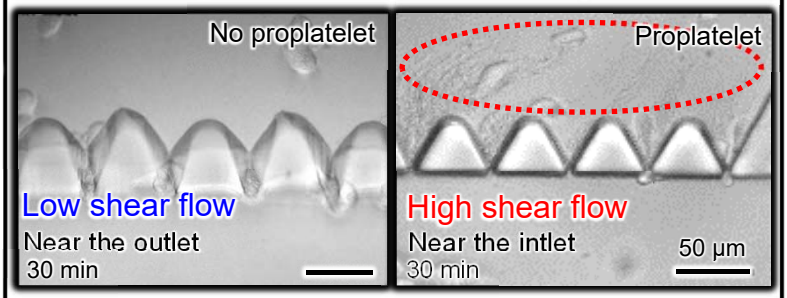


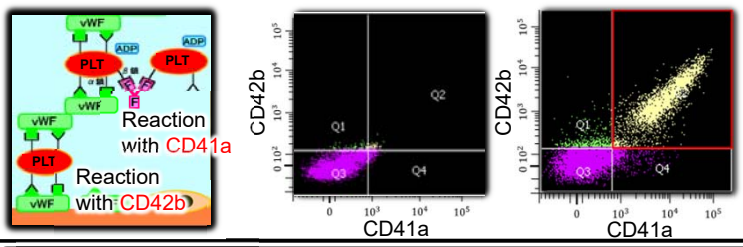
Many conditions in one chip



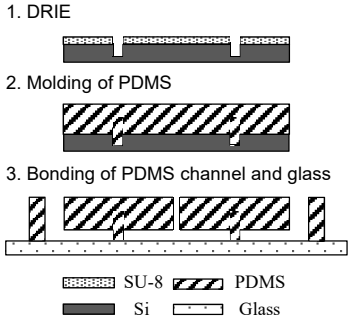
On-chip monitoring Experiment

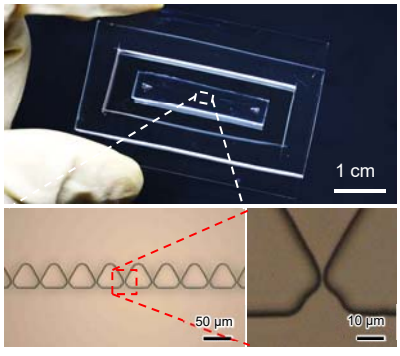






Fabrication





Photos of fabricated microfluidic chip

Conclusion

We constructed on-chip monitoring system of MKs in shear stress flow and observed generation of proplatelets. Collected cells had characteristic receptors of PLT. In the future, we will seek the mechanism of production of the PLT.

Contact person： Kazuya Tashiro
E-mail: tashiro@biorobotics.mech.nagoya-u.ac.jp,
URL: http://www.biorobotics.mech.nagoya-u.ac.jp/
Dept. of Micro/nano System Engineering, Nagoya University
TEL: +81-52-789-5220, FAX : +81-52-789-5027

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