ON-CHIP MONITORING OF THE MEGAKARYOCYTE IN SHEAR FLOW ENVIRONMENT

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Observation of the dynamic deformation of megakaryocytes

Donor shortage of the PLT

- Simulation of the number of blood donor

bleeding disorder

Factors of production of PLTs

Push Force
Shear Stress
Chemical interactions

⇒ Monitoring

Flow in

Flow out

Collection port of PLTs

Shear stress

Proplatelet

Micro pillar

Pocket

Many conditions in one chip

Fabrication

1. DRIE
2. Molding of PDMS
3. Bonding of PDMS channel and glass

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.

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Acknowledgements:
This work was partially supported by Scientific Research from Ministry of Education, Culture, Sports, Science and Technology (23106002).