Microfluidic Droplet Generation Technology for Clinical Diagnosis

HKUST | Website: http://www.thunder-bio.com/cn/

Invention

Early diagnosis of major diseases is one of the current major social needs. In conventional methods, it's difficult to detect trace amounts of biomarkers. Digital PCR technique is an effective solution to detect low-abundance biomarkers in complex background. We have achieved a high-throughput micro/nano droplet generation technology and applied to a single chip digital PCR assay to detect the mutant EGFR gene in the early lung cancer. The integrated digital PCR chip, which includes the sample dispersion, PCR amplification and detection steps, to achieve a rapid quantitative detection.

Marketing Opportunity

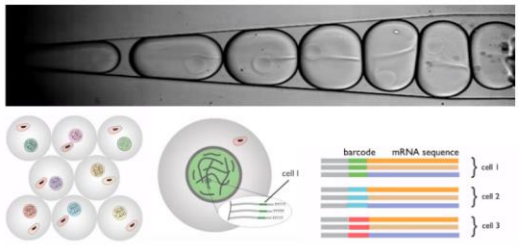
The technology can be used to develop applications such as early cancer screening, targeted therapy, companion diagnostic and non-invasive prenatal diagnosis.

Technology Highlight

- All in one microfluidic chip for droplet Digital PCR
- Easy-integrated droplet spontaneously generation (DSG) structure
- high-throughput micro/nano droplet generation technology

Figures

1. Single cell barcoding for NGS sample prep



2. Droplet Sorting