

Leibniz-Institut für Naturstoff-Forschung und Infektionsbiologie – Hans-Knöll-Institut –

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# Tropfenbasierte Mikrofluidik: ein Weg zur Ultra-Hochdurchsatzsuche nach neuen Antibiotika

$10^7$  unterschiedliche Bakterien

10.000.000

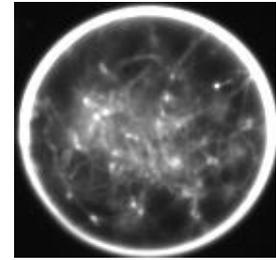


# 10<sup>7</sup> unterschiedliche Bakterien

## Standard: Mikrotiterplatte



## Tropfen-Format



# Tests

10<sup>7</sup>

10<sup>7</sup>

Test-Volumen

200 µl

200 pl

Totales Volumen

2000 l

1 Millionenfach

2 ml

Test/s

1/s

1000/s

Totale Zeit

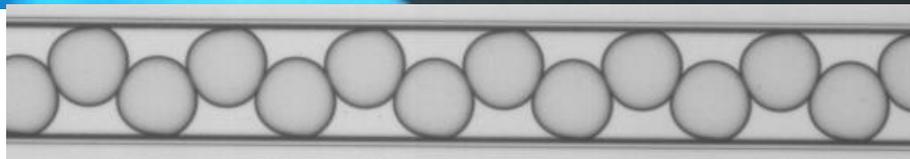
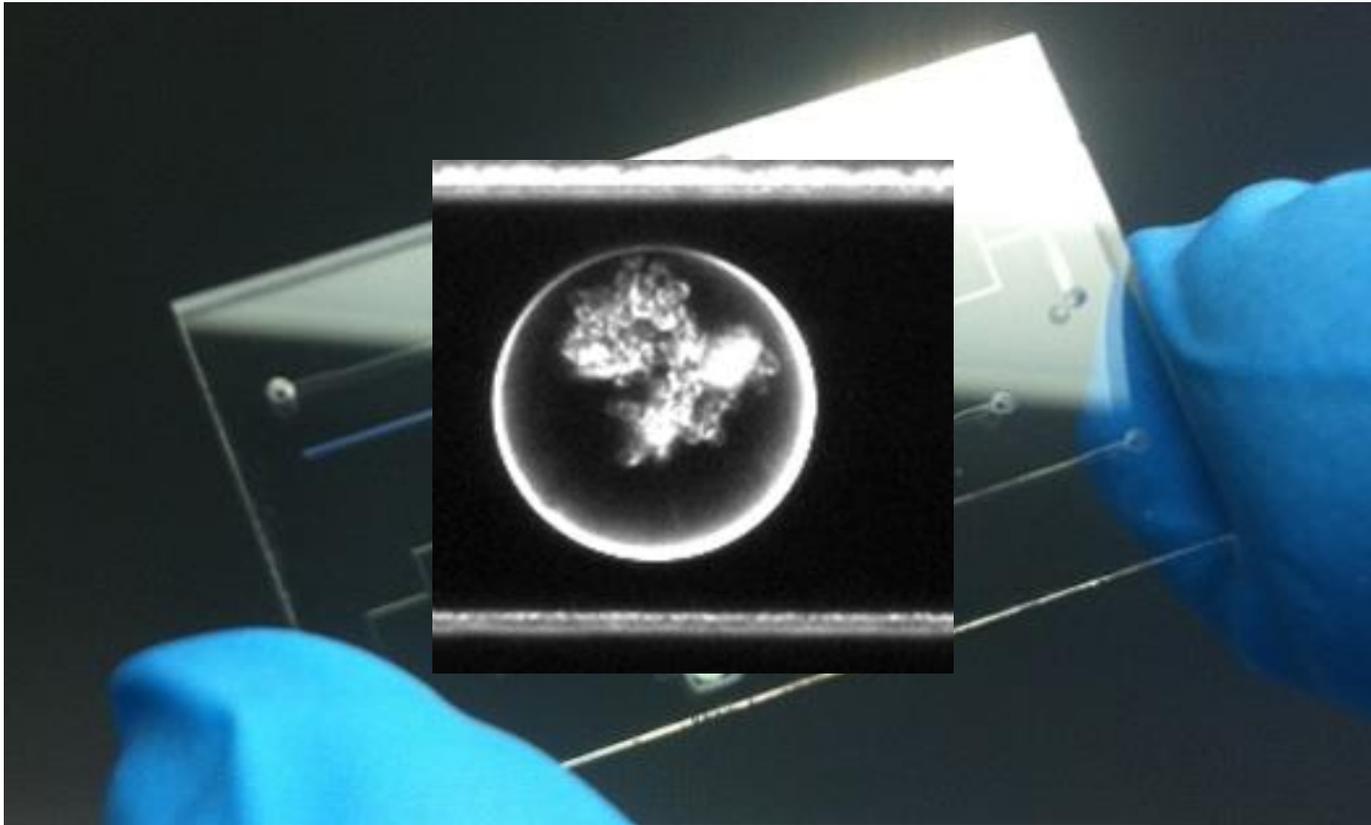
116 d

1 Tausendfach

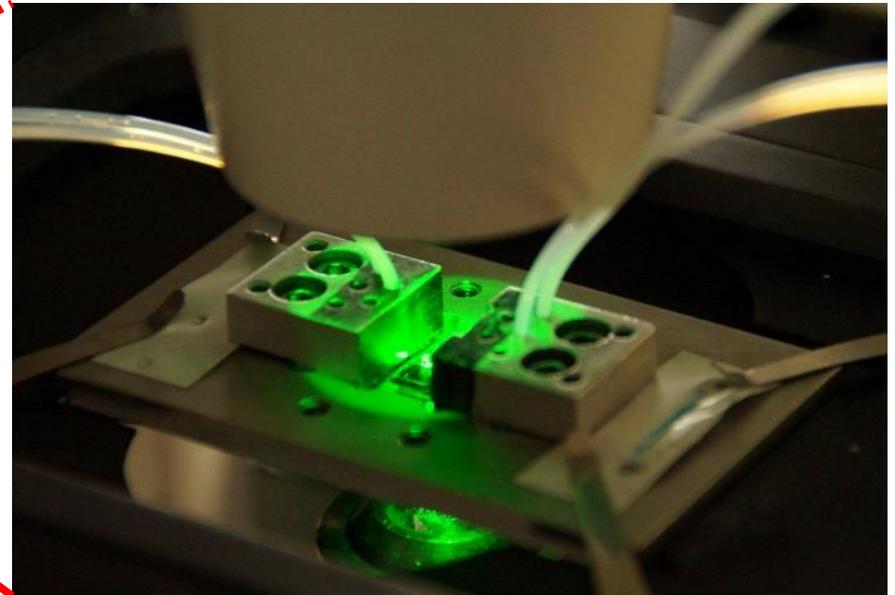
2.8 h



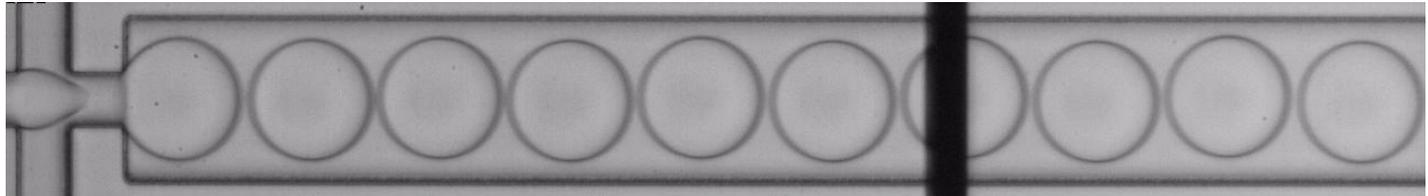
# Tropfen sind wässrige Kompartimente in Öl



# Eine mikrofluidische Arbeitsstation

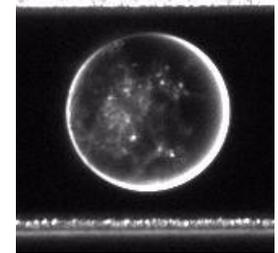
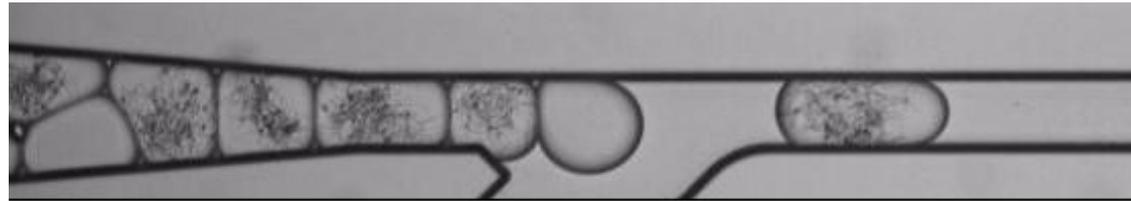


Generierung  
~1000 Hz

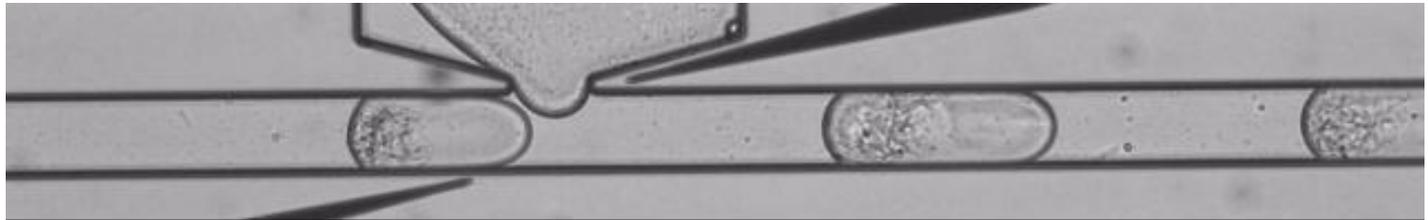


13.03.2013 21:48:55 -00:00:03:768,22[HH:MM:SS:mm] 000000000 MC1362 Mikrotron 1280x178 2500fps 151µs V1.7.3 (Build: 2402)

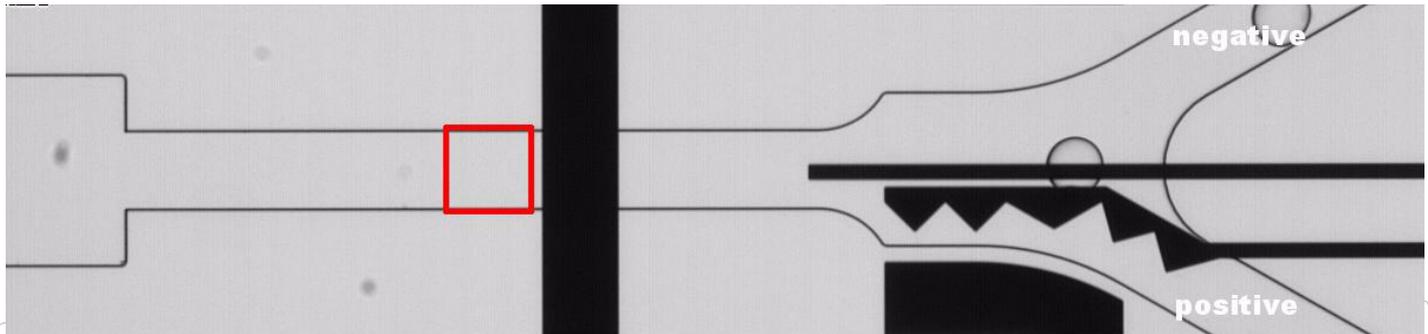
Reinjektion &  
Triggern  
~500 Hz



Pikoinjizieren  
~500 Hz

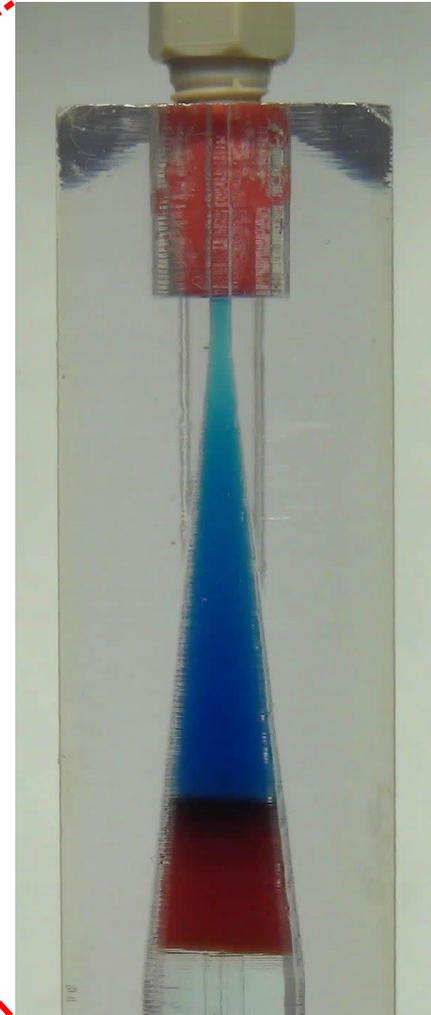
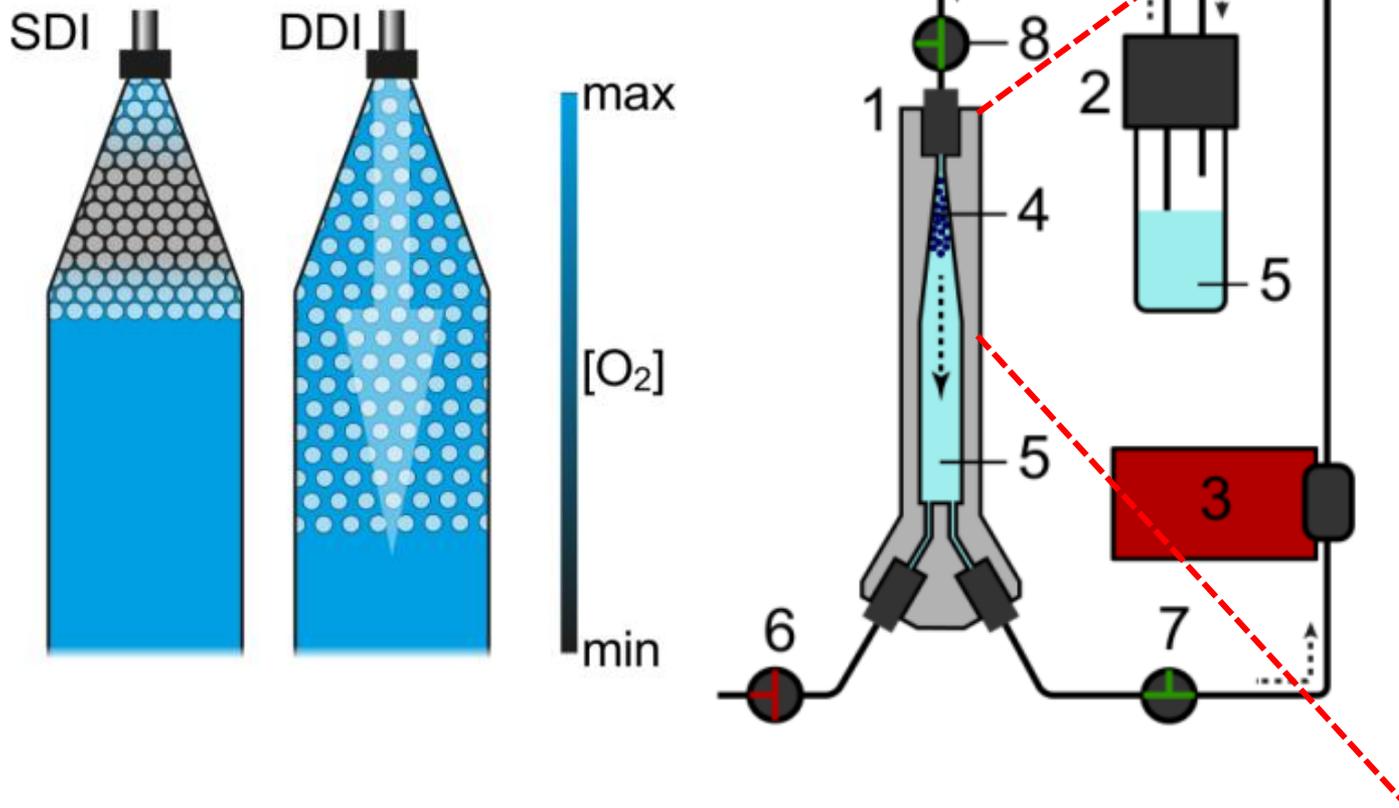


Sortieren  
~100 Hz

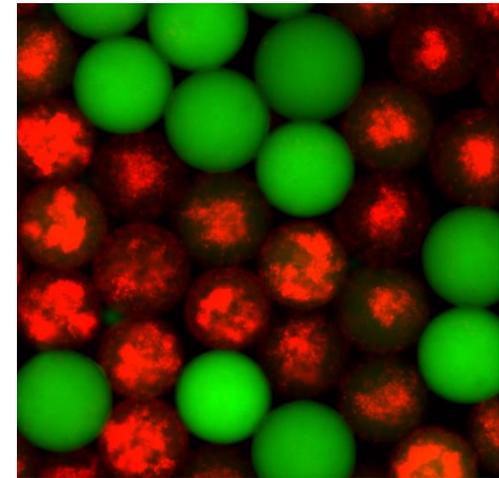
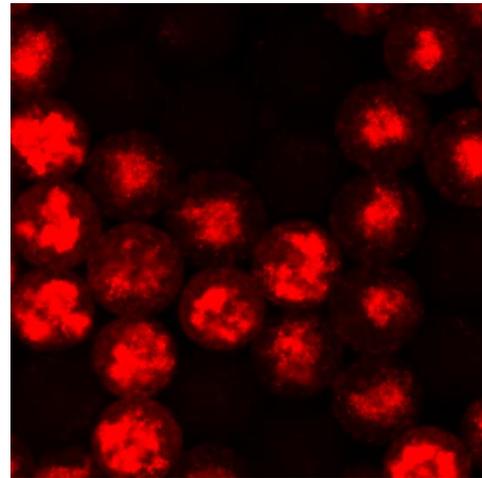
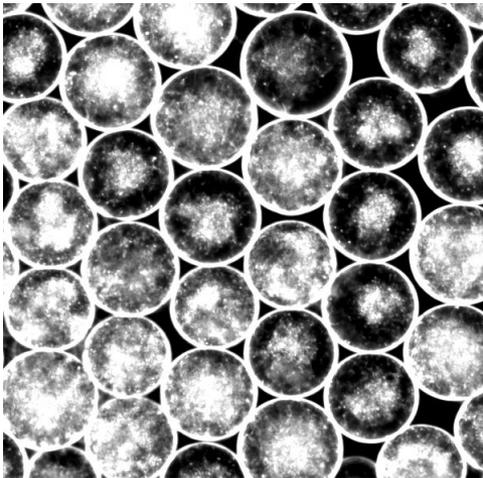
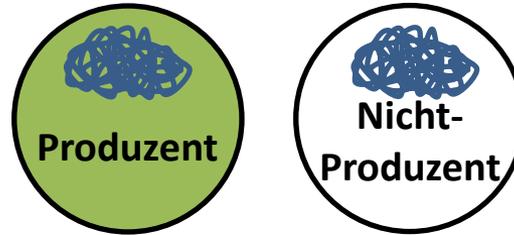


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# Dynamische Tropfen-Inkubation



# Prüfung des Konzepts zur Antibiotikasuche erfolgreich!



# Danksagung

## Bio Pilot Plant

Martin Roth

Uwe Horn

Miguel Tovar

Thomas Weber

Karin Martin

Karin Burmeister

Oksana Shvydkiv

Sundar Hengoju

Mahipal Choudhary

Emerson Zang



## HKI

Christine Beemelmans

Kirstin Scherlach



## Uni Leipzig

Detlev Belder

Julia Beulig



## TU Graz

Torsten Mayr

Shiwen Sun



## Applied Systems Biology

Marc Thilo Figge

Stefanie Dietrich

Carl M. Svensson

Susanne Brandes



Bundesministerium  
für Bildung  
und Forschung



Thüringer Aufbaubank



Freistaat  
Thüringen  
Ministerium  
für Wirtschaft, Wissenschaft  
und Digitale Gesellschaft

