biophotonics diagnostics

Faster Assessment of Resistances

RAMANBIO**ASSAY™**

Chip-based solutions help to save time and save lives in the fight against infectious diseases!

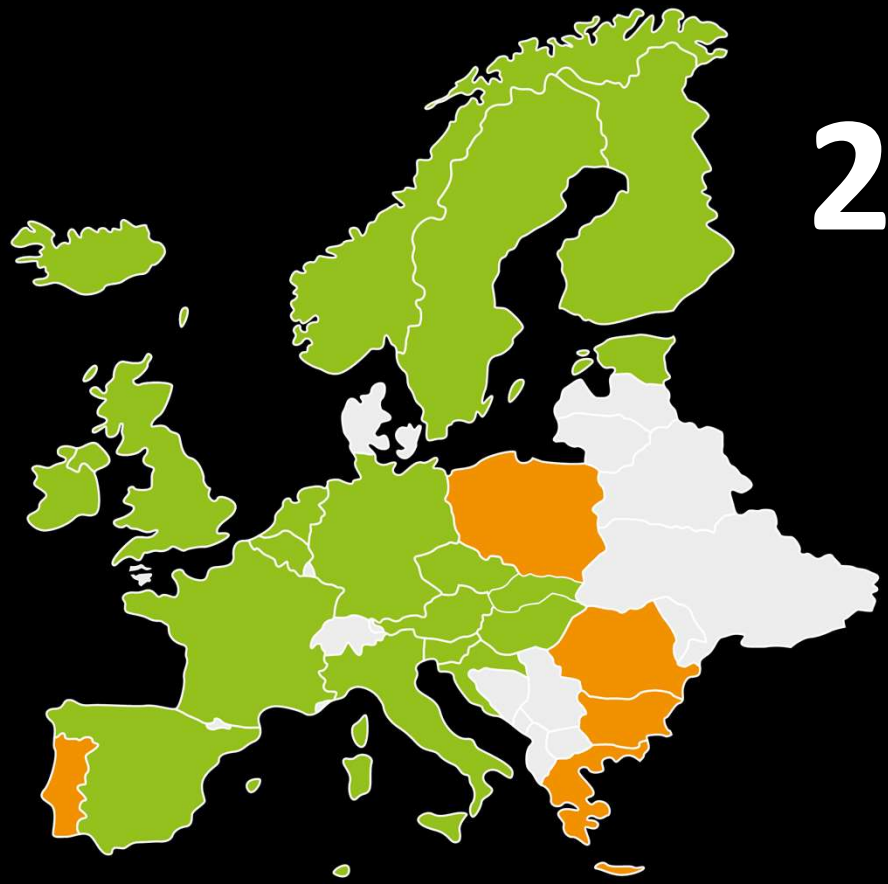
Antibiotic Resistance

biophotonics diagnostics

- No Data
- < 5%
- 5 – 25%
- 25 – 50%

Antibiotic Resistance of *Escherichia Coli* to 3rd Gen Cephalosporine

European Centre for Disease Prevention and Control



2002

Increasing Antimicrobial resistance (example Escherichia coli)

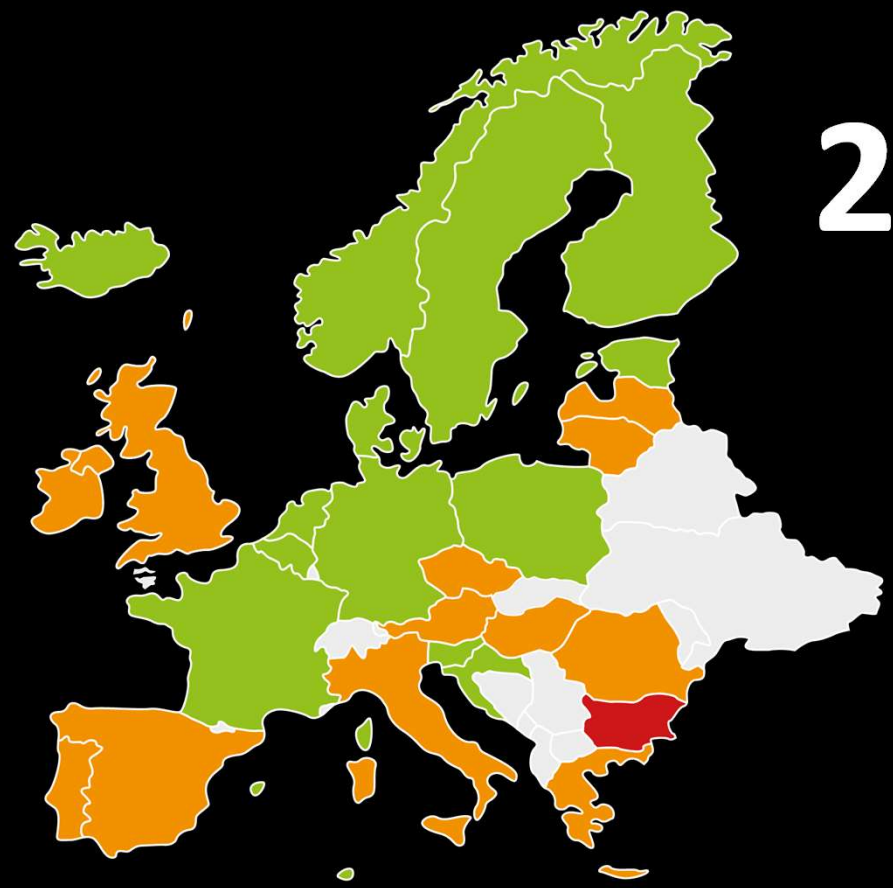
Antibiotic Resistance

biophotonics diagnostics

- No Data
- < 5%
- 5 – 25%
- 25 – 50%

Antibiotic Resistance of *Escherichia Coli* to 3rd Gen Cephalosporine

European Centre for Disease Prevention and Control



2008

Increasing Antimicrobial resistance (example Escherichia coli)

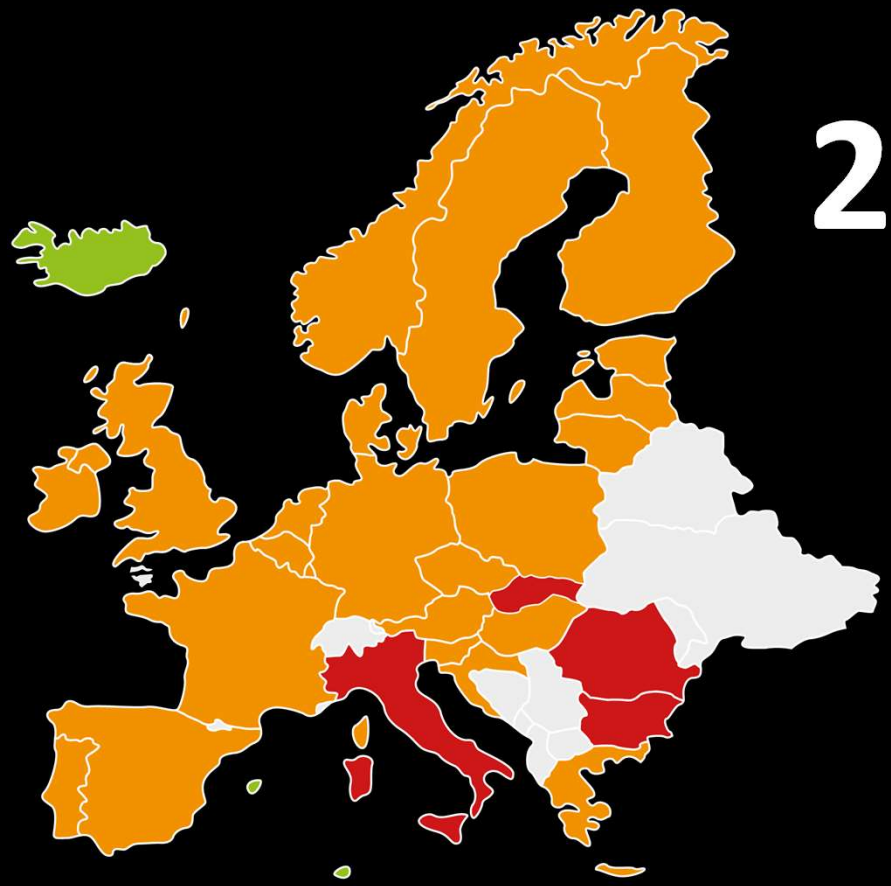
Antibiotic Resistance

biophotonics diagnostics

- No Data
- < 5%
- 5 – 25%
- 25 – 50%

Antibiotic Resistance of *Escherichia Coli* to 3rd Gen Cephalosporine

European Centre for Disease Prevention and Control



2016

Increasing Antimicrobial resistance (example Escherichia coli)

Antibiotic Resistance

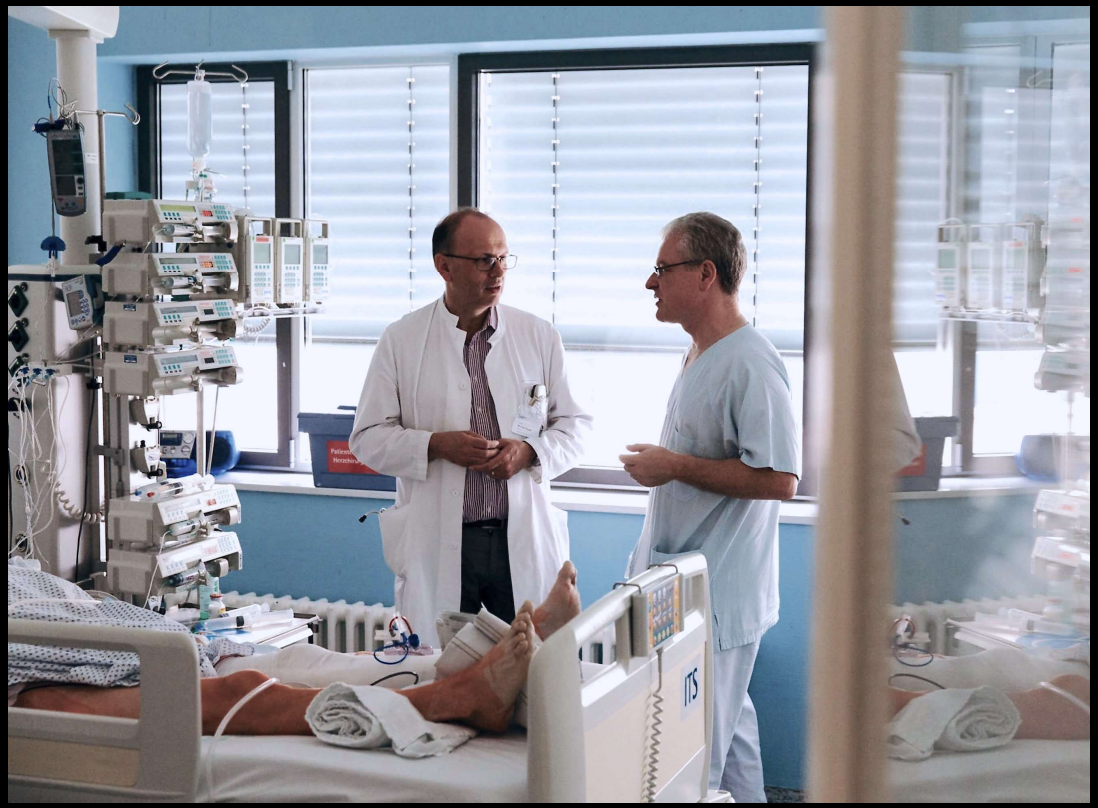
biophotonics diagnostics

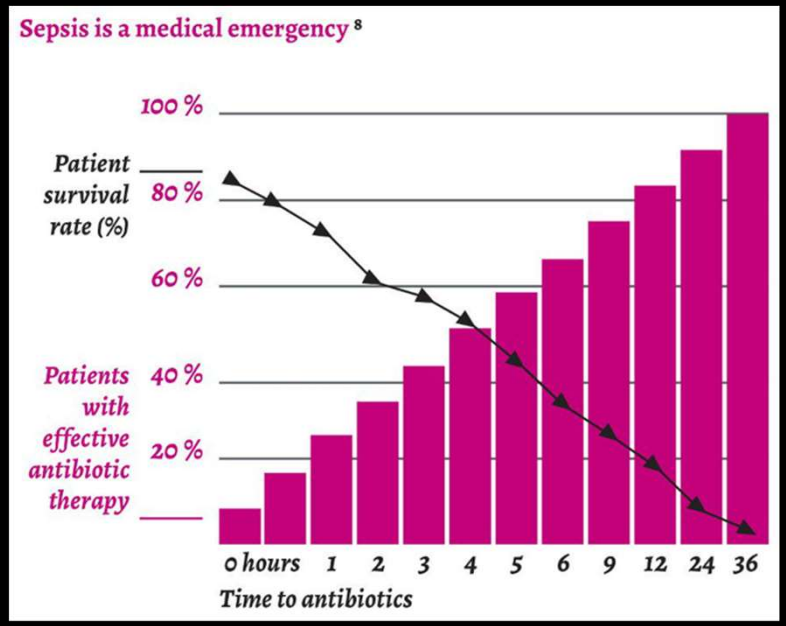
- No Data
- < 5%
- 5 – 25%
- 25 – 50%

Increasing Antimicrobial resistance

The global challenge

biophotonics diagnostics



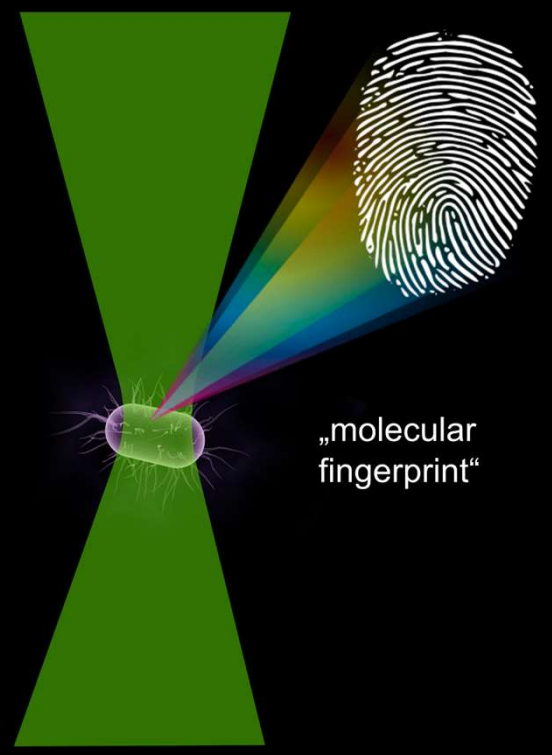


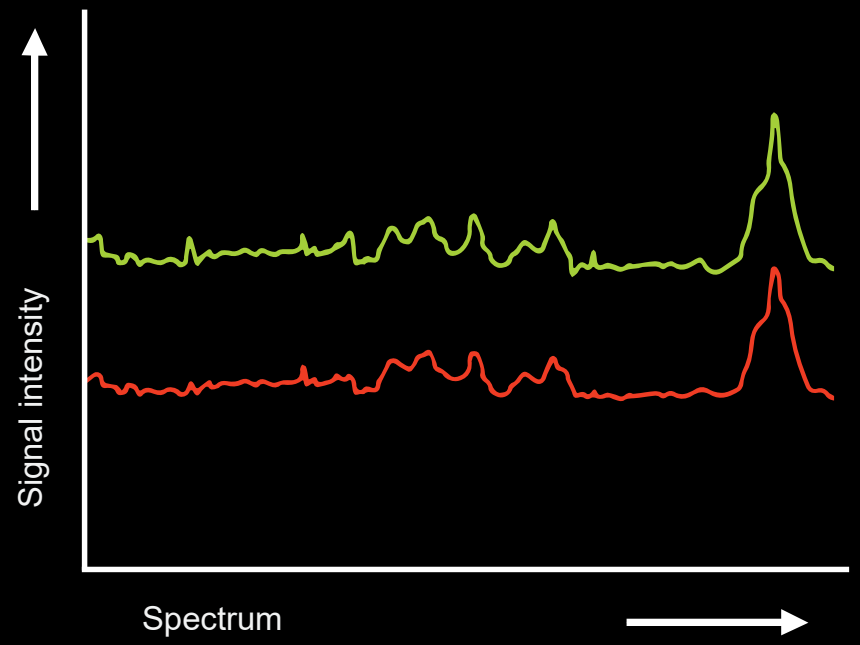
Septic shock: 12% of patients die before receiving microbiol. Dx results

Garnacho-Montero J, 2014

Technology for a new generation of pathogen diagnostics

biophotonics diagnostics

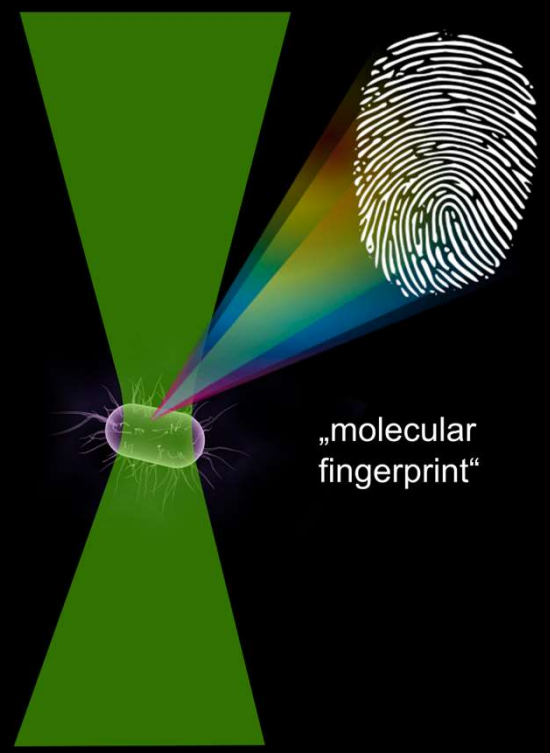


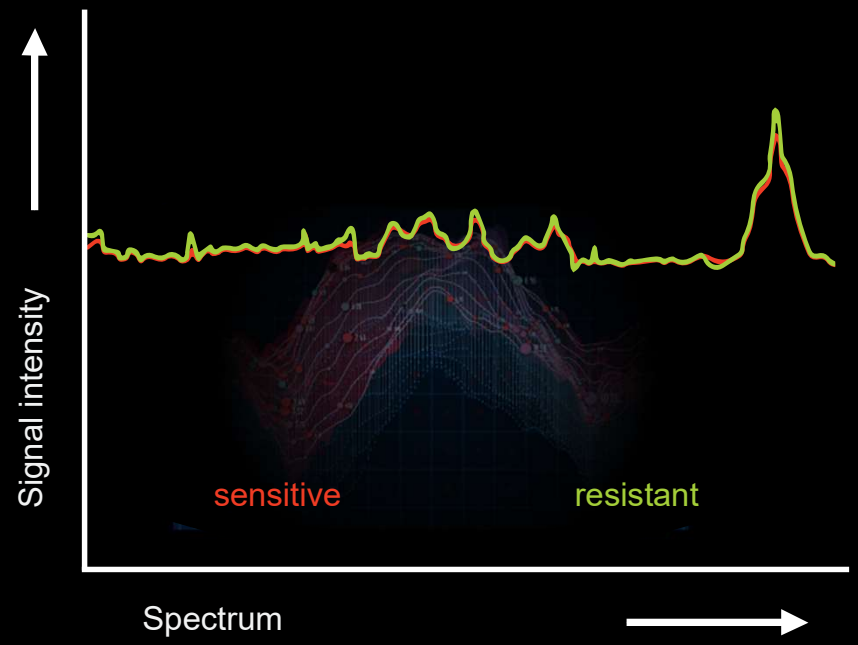


Data analysis is performed by machine learning algorithms

Technology for a new generation of pathogen diagnostics

biophotonics diagnostics

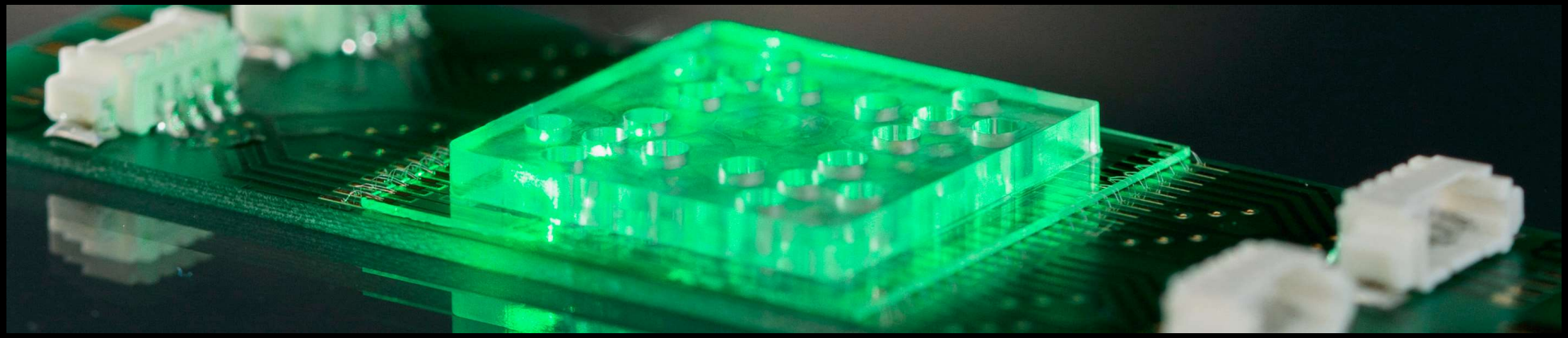


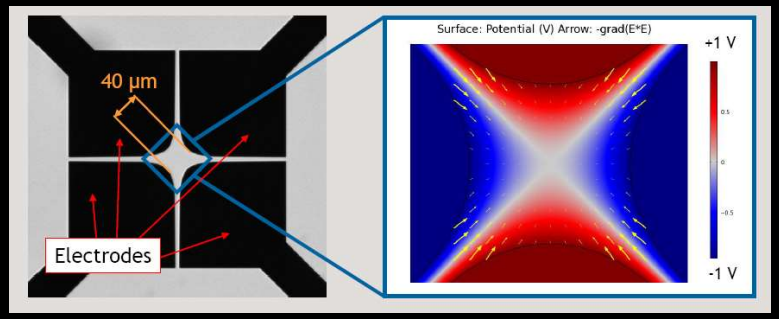


Data analysis is performed by machine learning algorithms

RAMANBIOASSAY™ - product

biophotonics diagnostics

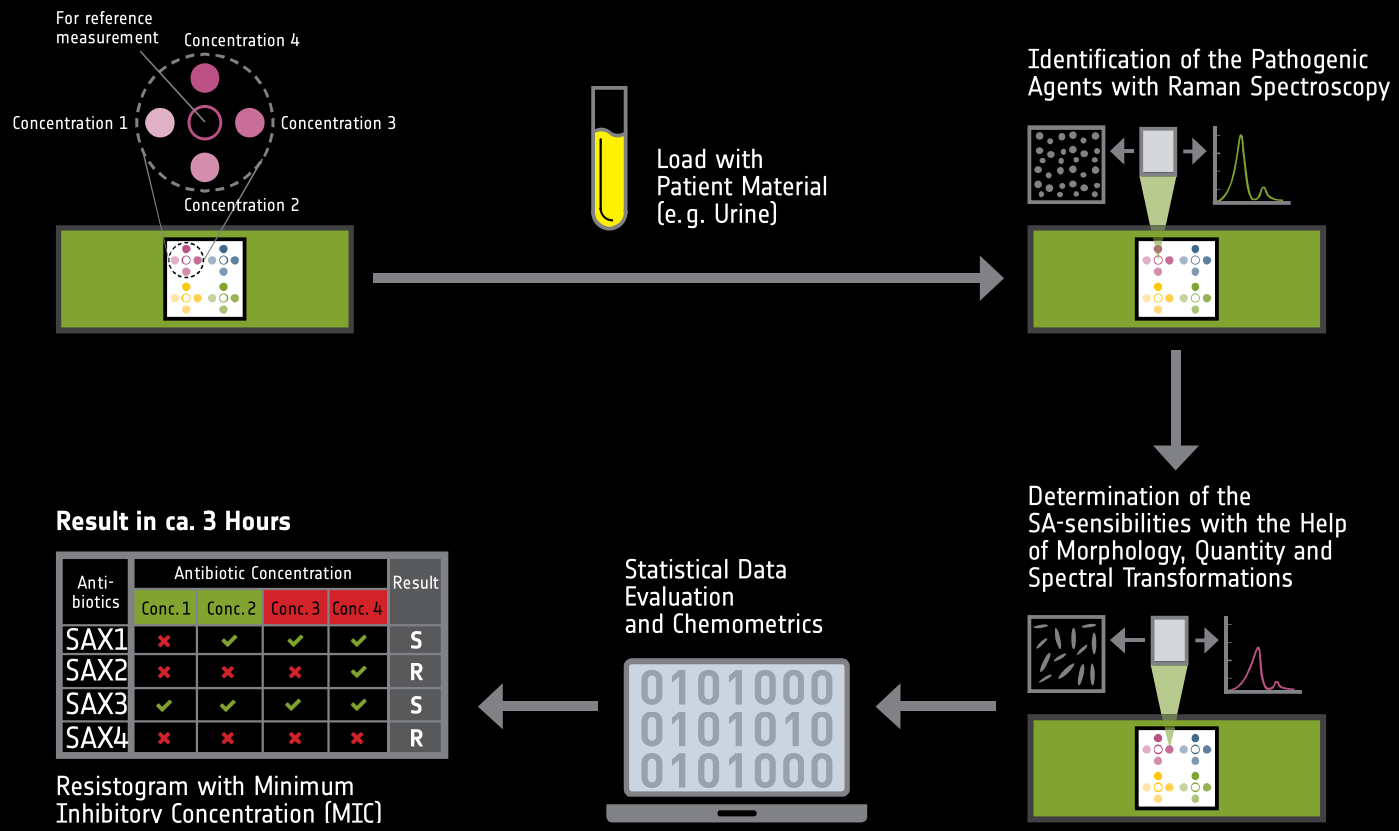




Measurement chip with preloaded antibiotics

RAMANBIOASSAY™ - award winning technology*

biophotonics diagnostics



Anti-biotics	Antibiotic Concentration				Result
	Conc. 1	Conc. 2	Conc. 3	Conc. 4	
SAX1	✗	✓	✓	✓	S
SAX2	✗	✗	✗	✓	R
SAX3	✓	✓	✓	✓	S
SAX4	✗	✗	✗	✗	R

Patents:

PCT IB2017/054533

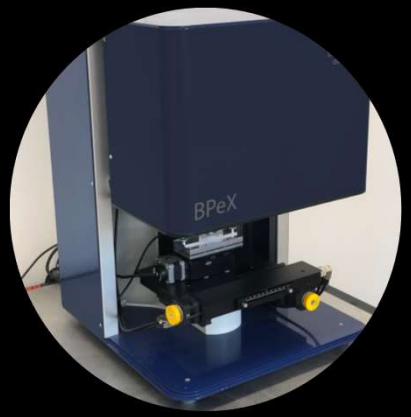
WO2017/04178

Simple handling and resistogram within 3 hours

*Berthold Leibinger Innovationspreis 2018, 3rd Prize

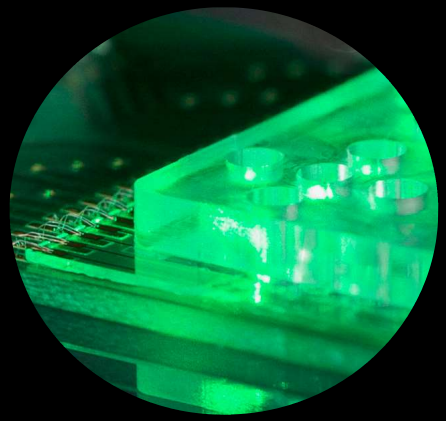
RAMANBIOASSAY™ - product

biophotonics diagnostics



Diagnostic device

Measurement chip

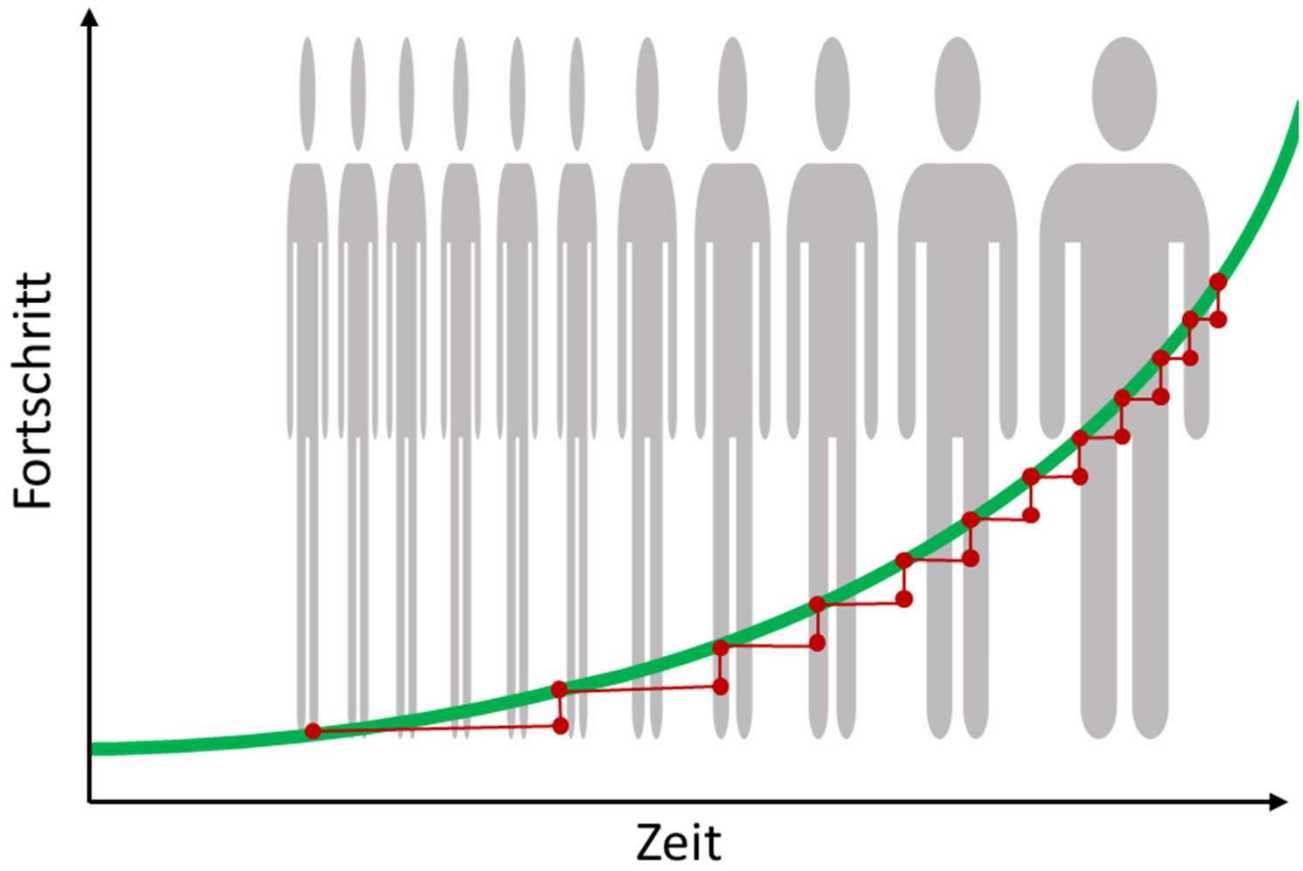


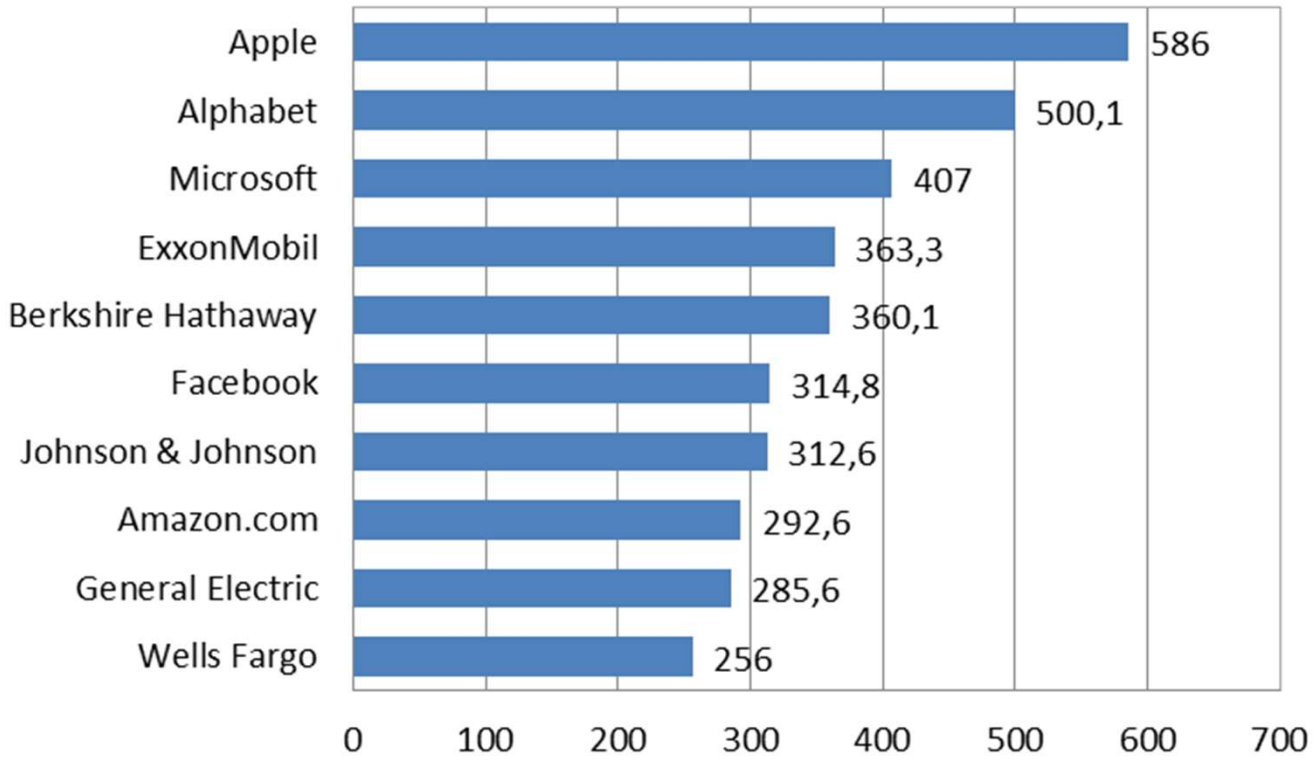
Artificial Intelligence with Machine learning algorithms

Industrie 4.0 - Potenzial für Smart Textiles


Industrie 4.0
OPC UA
I4.0 Komponente
RAMI 4.0
Manifest
Informationsmodell
I4.0 Kommunikation
Asset
Instance
Life Cycle & Value Stream
Komponentenmanager
Type
Identität
Virtuelle Beschreibung
Verwaltungsschale
Digitaler Zwilling


Industry 4.0
digital
revolution
data
future
tech
digitization
industrial
connectivity
trend
engine
computing
cyber
smart
machines
internet
sales
cloud
systems
sector
strategy
resources
industrie
factory
intelligent
technology
manufacturing
physical
ideation
strategic
automation
logistics
business
connected
robot
sensors
project
exchange
render
fourth
automotive
iot


Fortschritt
Zeit



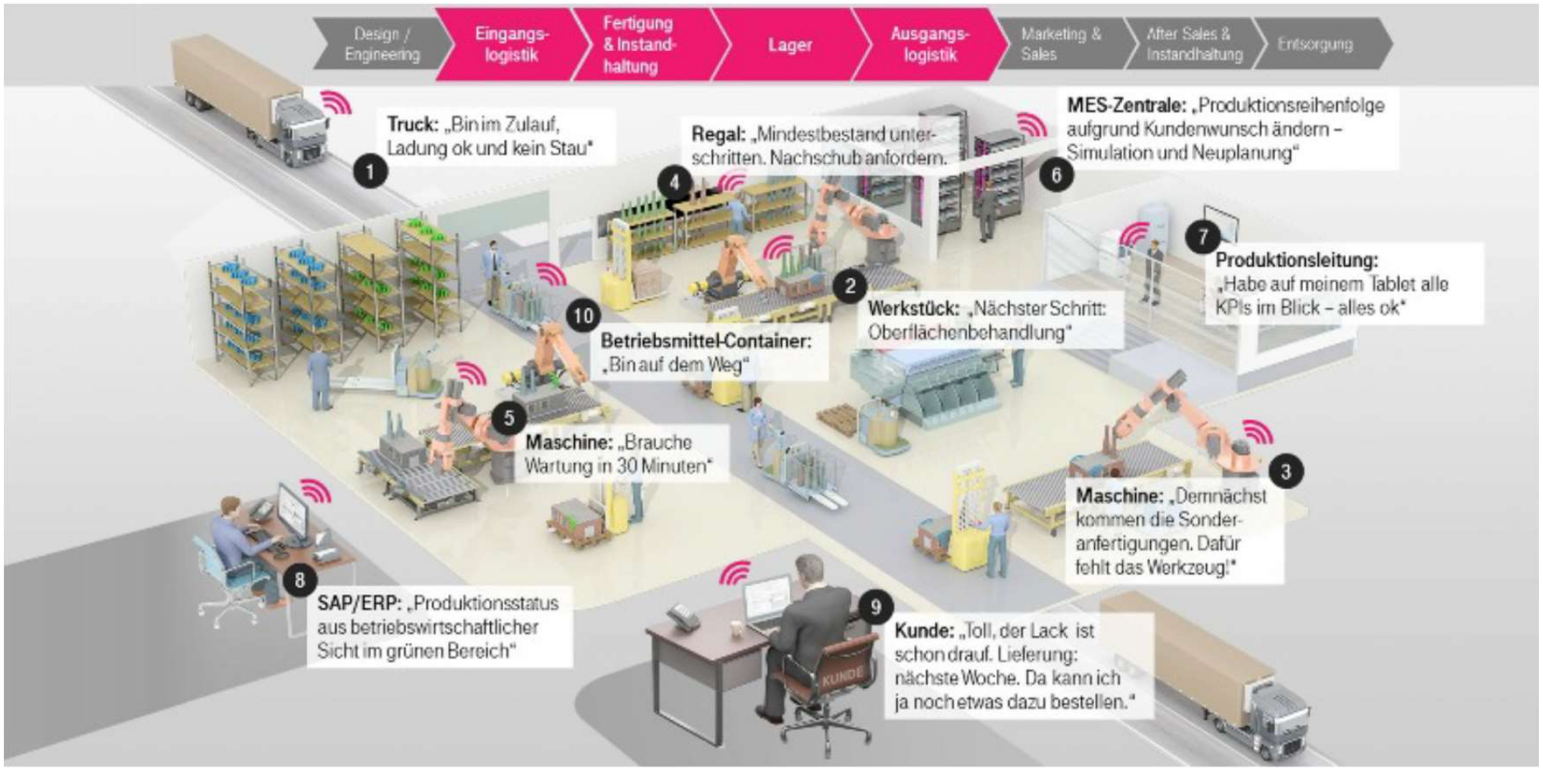
Börsenwert in Milliarden US-Dollar, Stand April 2016

Zahlenquelle: Statista.com

Das „Silicon Valley“ lernt, wie gute industrielle Produktion arbeitet.

Die produzierende Industrie lernt, wie Digitalisierung arbeitet.

Quelle: Marco Kröner / pixelio.de



Quelle: Lünendonk®-Whitepaper, Smart Factory – Wie die Digitalisierung Fabriken verändert

https://www.youtube.com/watch?v=MRPK1rBI_rL

Quelle: Fotolia, blocberry

Quelle: Fotolia, belamy

Die Digitalisierung passiert analog!