

SILICON BASED NANOWELL PLATFORM FOR MULTIPLEXED ANTIBIOTICS TESTING

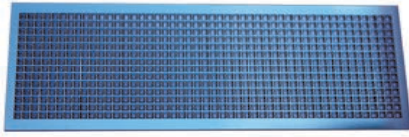
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Silicon based nanowell platform for multiplexed antibiotics testing




Nanowell slide

- Silicon and glass
- Silicone top membrane
- 700 wells/slide
- 500 nl/well

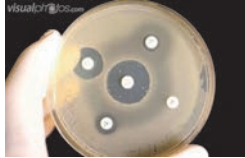
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Objective:
To develop a fast and multiplexed antibiotic susceptibility test.




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Existing technology



Diffusion assay

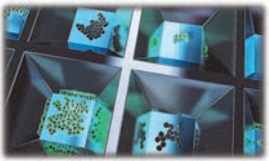


E-test

- Time consuming
- Requiring pre-cultivation of the patient sample

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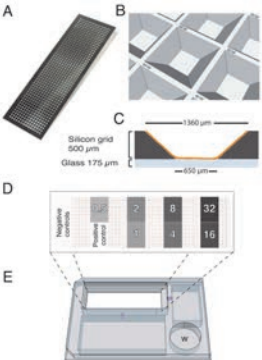
- Nanoscale cultures
- Optical recordings
- Real-time determination of time point when growth shifts from lag to early logarithmic phase, T_{lag}



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Nanowell device

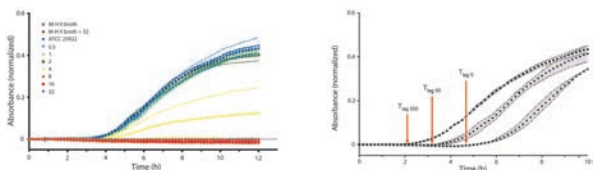
- 672 wells/slide
- 500 nl/well
- Precoated with antibiotics
- Custom designed adaptor



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Analysis

- Temperature controlled microplate reader
- Absorbance measurements 600 nm every 10 min for 12h
- Algorithm-based determination of T_{lag}
- Results presented in easy to read heatmaps



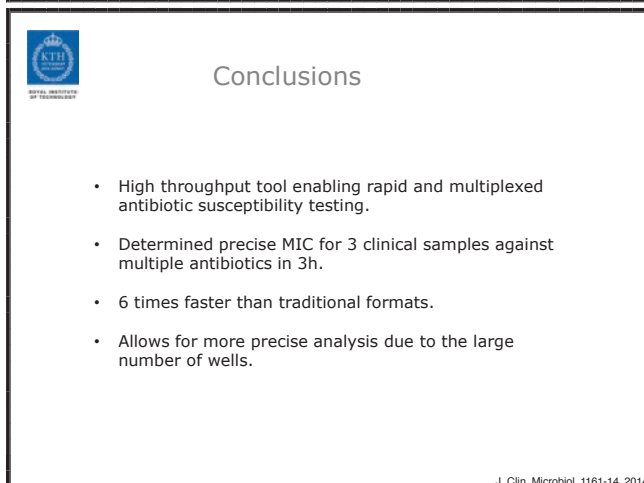
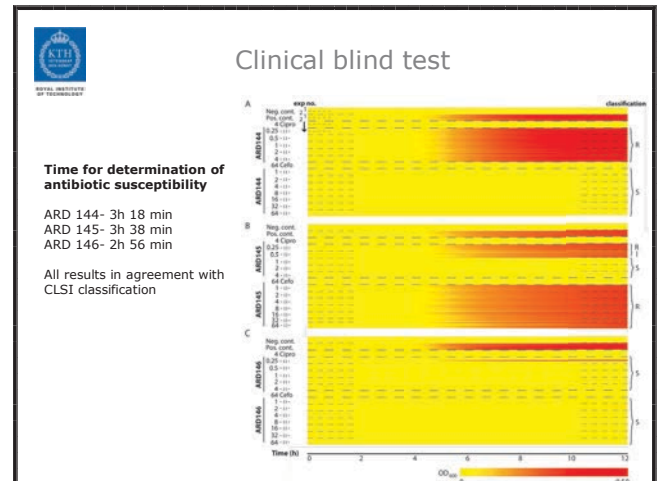
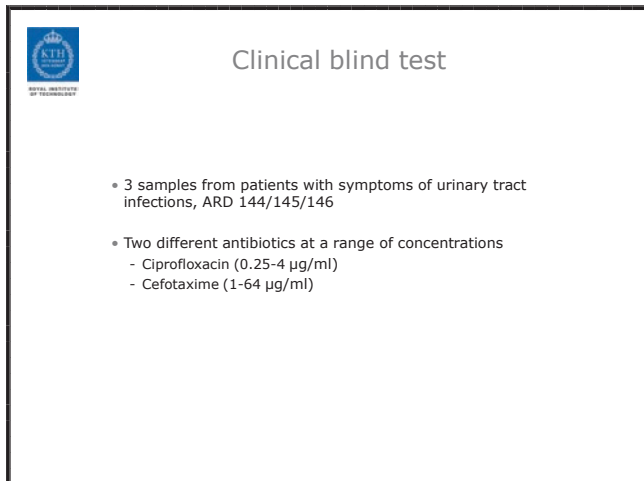
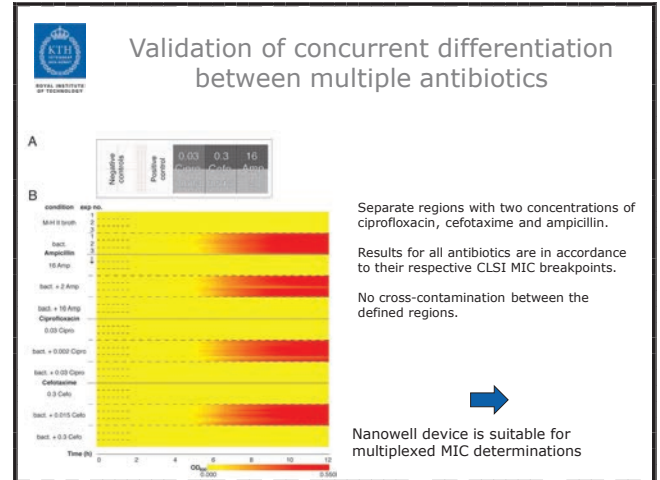
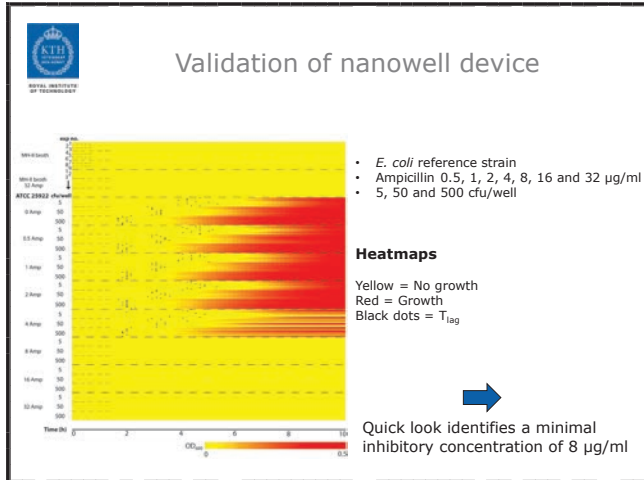
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