A handheld, rapid, sensitive electrochemical immunoassay Point of Care system

AACC Oak Ridge Presentation
April 19th, 2013
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Overview

Ag+ have developed a handheld diagnostic platform technology based on our patented electrochemical immunoassay biosensor, delivering the next generation in rapid, quantitative diagnostics.

Company

• Technology developed at National Physical Laboratory, UK
• Spun out officially in 2011
• 10 staff (6 science based)
• Compliant to ISO13845
Application sectors

- Human Clinical
- Human Non-Clinical
- Veterinary
- Sports
- Food
- Military
- Environmental

System capability

- Platform technology
- Fully quantitative
- Rapid time to result
- Single use assay on fluidic chip
- Multiplexing
- Variety of sample matrix
- Handheld reader

Assay and signalling system

- Sandwich and competitive assays
- Electrochemical measurement
- Silver nanoparticles for signalling conjugated to antibodies/antigen\(^1\)
- Magnetic particles (antibody/antigen) for solid phase in assay

\(^1\) Preparation and quality control of silver nanoparticle-antibody conjugate for use in electrochemical immunosensor. Mateusz S. Szymanski, Robert A. Porter
Assay system

Video goes here; too big to publish online.

To view, please go to http://www.agplusediagnostics.com/technology/

Reading device

- Communication enabled
- Full assay control
- Results analysis
- On-board information storage
- Customisable interface
- Battery powered
- Portable
- Hand-held

Assay results

<table>
<thead>
<tr>
<th>ng/mL</th>
<th>Mean (nC)</th>
<th>%CV</th>
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<tbody>
<tr>
<td>0</td>
<td>7</td>
<td>42.4%</td>
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<tr>
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<td>26%</td>
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<td>3%</td>
</tr>
<tr>
<td>100</td>
<td>11614</td>
<td>4%</td>
</tr>
</tbody>
</table>

- Hapten and sandwich assay formats on platform
- Sensitivities to down to 8pg/ml
- Other assays on platform
  - Progesterone
  - TSH
  - Testosterone
  - Cortisol

Standard Curve of TnI Concentration in Serum
**Conclusion**

- Rapid electrochemical immunoassay that achieves key needs of POC diagnostics
- Overcome previous issue of harsh oxidative processes for silver
- Improved conjugation methods
- Development of single use assay chip controlled by handheld reader
- Ability to achieve clinically relevant results

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Thank you

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