

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



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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.



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Company

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



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Application sectors

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



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System capability

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



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Assay and signalling system

- Sandwich and competitive assays
- Electrochemical measurement
- Silver nanoparticles for signalling conjugated to antibodies/antigen¹
- Magnetic particles (antibody/antigen) for solid phase in assay

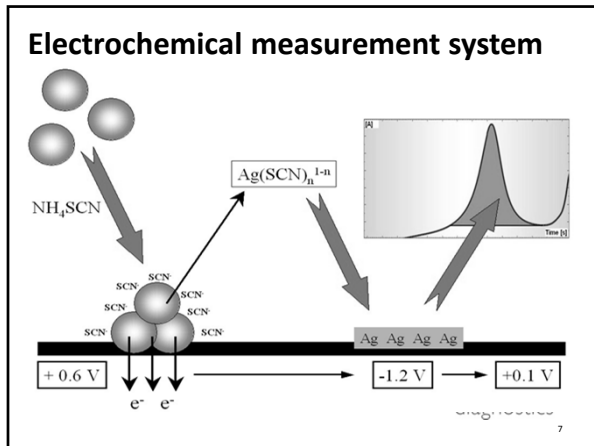


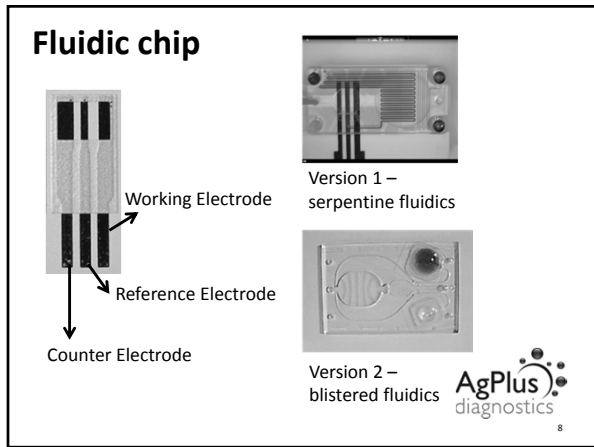
Silver nano-particle
10⁹ Ag ions

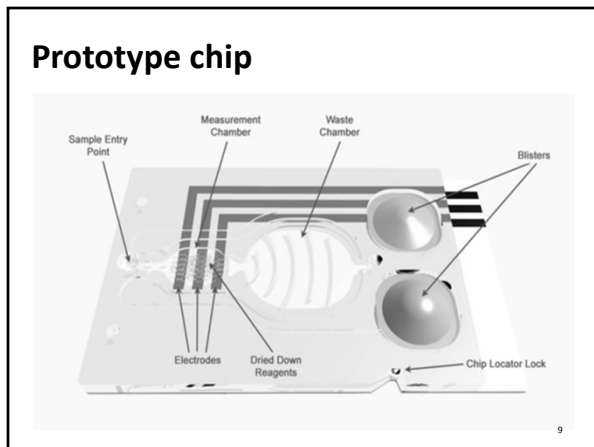


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¹Preparation and quality control of silver nanoparticle-antibody conjugate for use in electrochemical immunoassays. Mateusz S. Szymanski, Robert A. Porter







Assay system

Video goes here;
too big to publish online.

To view, please go to
<http://www.agplusdiagnostics.com/technology/>



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Reading device



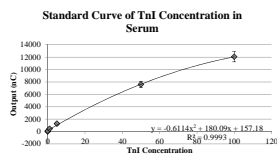
- Communication enabled
- Full assay control
- Results analysis
- On-board information storage
- Customisable interface
- Battery powered
- Portable
- Hand-held



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Assay results

ng/mL	Mean (nC)	%CV
0	7	424%
0.1	109	26%
1	403	5%
5	1129	4%
50	7311	3%
100	11614	4%



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



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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



Thank you

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