



# Next Generation Super-Sensitive Multiplexed Immunoassay Technologies

## Applications

The super-sensitive, multiplexed immunoassay technology that PalindromX has developed has applications in the following areas:

- Clinical Diagnostics
- Environmental Testing
- Food Analysis
- Veterinary Medicine

The company also has expertise in bone resorption assays and generates revenue from this activity.

## Industry's Need and PalindromX Solutions

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### Lowering Limits of Detection

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Immunoassay enhancements	PalindromX has demonstrated a 1000-fold increase in sensitivity over current techniques in buffer and serum samples
New labels and conjugation technologies	PalindromX technology employs a novel conjugation approach to increase sensitivity.
Amplification technologies	PalindromX technology uses accepted amplification techniques but with greater specificity thereby improving sensitivity to molecules of interest
Solid phase enhancements and novel binding agents	PalindromX technology works in liquid phase, thereby providing a step change in improvement over current approaches to immuno-PCR

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### Widening the scope of detection

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Multi-analyte platforms and Multiplexed assays	PalindromX technology is designed to provide multi-analyte capability in a single sample. Up to 7 analytes are proposed.
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## How PalindromX technology works

Capture antibodies are used in conventional formats: detector antibodies are labelled with a small, carefully structured DNA molecule. After formation of the antibody-protein-antibody complex, a large complementary DNA molecule is added and this engages with the detector antibody-bound DNA. The structure of this larger DNA molecule allows it to be amplified by specific probes, giving rise to a signal, which is measured. This approach massively reduces non-specific amplification of DNA that is inevitably present in the analytical sample and causes problems with conventional immuno-PCR detection systems.

## Intellectual Property (IP)

PalindromX has licensed a portfolio of patents from the University of Liverpool. These protect the immuno-PCR approach and complimentary IP relates to the DNA-based generation of specific antibodies.

Immuno-PCR Method	WO03/048388
Immuno-PCR Method	PCT/GB04/000193
DNA Vaccination	WO 03/048371 A3

These patents are at National Phase in the USA and Europe and are expected to be granted.

## Markets

In clinical *in vitro* diagnostic market is estimated to be in excess of \$20bn, comprising about \$20bn for clinical diagnostics and \$2.2bn for the research market. \$10bn/year is spent specifically on immunoassay based methods.

## Key Features

- Dramatic reduction in assay Limits Of Detection
- Increased sensitivity with similar cost per test
- Multi-analyte capability
- Compatible with current automation systems

## Benefits

Improvement in diagnostic efficiency  
No increased costs for improved technology  
Increased sample turnover/reduced cost per test  
Reduced costs of implementation

## PalindromX: The Way Forward

PalindromX has secured funding from Merseyside Special Investments Fund/Liverpool Ventures to deliver the following:

Recruit a suitably qualified post-doctoral researcher to continue laboratory studies:	Completed, October 2007
Proof of concept studies in serum/plasma for two commercially valuable analytes:	Expected, April 2008
Use study data to enter license negotiations for clinical diagnostic applications:	Expected, Q2, 2008
Develop multi-analyte capability to proof of concept stage:	Expected, Q2, 2008
Develop existing complementary IP relating to DNA-based antibody production:	(2008)
Seek partnerships for development in other application areas:	(2008)

**For further information on PalindromX immunoassay, DNA-vaccination or bone resorption technologies, please e-mail us at: [PdXEnq@btinternet.com](mailto:PdXEnq@btinternet.com)**



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