**DIAGNOSING DISEASES WITH NOVEL NANOPARTICLES**

**WHAT ARE LATERAL FLOW ASSAYS?**

Lateral flow assays are inexpensive simple devices which can be used to test for a target substance (analyte) in a sample without requiring the use of specialized or expensive equipment.

Samples flow from the sample pad and re-solubilize colored nanoparticles. The nanoparticles flow past a test line. If the analyte being tested for is present they generate a signal. The most familiar everyday example of this is the home pregnancy test.

**SAMPLE PAD**

**CONJUGATE PAD**

**TEST LINE**

**CONTROL LINE**

**WICK**

**WHY ARE ENGINEERED NANOPARTICLES USEFUL?**

Lateral flow assays can be used to test for a range of diseases. Precisely engineered nanoparticles improve the sensitivity of these tests, and help diagnose disease in under ten minutes and for less than a dollar.

**GOLD NANOPOPCLES**

- Most widely used
- Most common size: 40–80 nm
- High contrast red signal

**GOLD NANOSHESLLES**

- 10-20 times more sensitive
- Lower density – better flow
- Stronger signals (blue-green)

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Based on materials provided by nanoComposix, manufacturers of precisely engineered and highly characterized nanoparticles.