## P011 Recombinase polymerase amplification

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DNA amplification is at the heart of modern nucleic acid testing. Nucleic acid based tests are, however, still limited to centralised laboratories due to instrumentation needs and handling issues. ASM Scientific Ltd has developed an isothermal, low temperature DNA amplification technology which can be rendered portable, disposable, easy to use, and instrument-free. The technology is referred to as Recombinase Polymerase Amplification (RPA). RPA uses recA-like recombinases to target oligonucleotides to duplex DNA without a need for global chemical or thermal melting, and combines this activity with displacement DNA synthesis. RPA boasts single molecule sensitivity, high specificity, rapid kinetics, broad applicability, multiplexability, quantitative real-time behaviour. A proprietary target-specific fluorescent probe approach may also be used. The process operates robustly at constant temperatures ranging from room temperature up to at least 40°C, and could be performed without a need for equipment in most environments. Potential applications of the RPA technology include detection of pathogens such as MRSA, TB, and Chlamydia. Other possible applications are in the areas of food and environmental testing, forensic analysis, and personalised medicine.