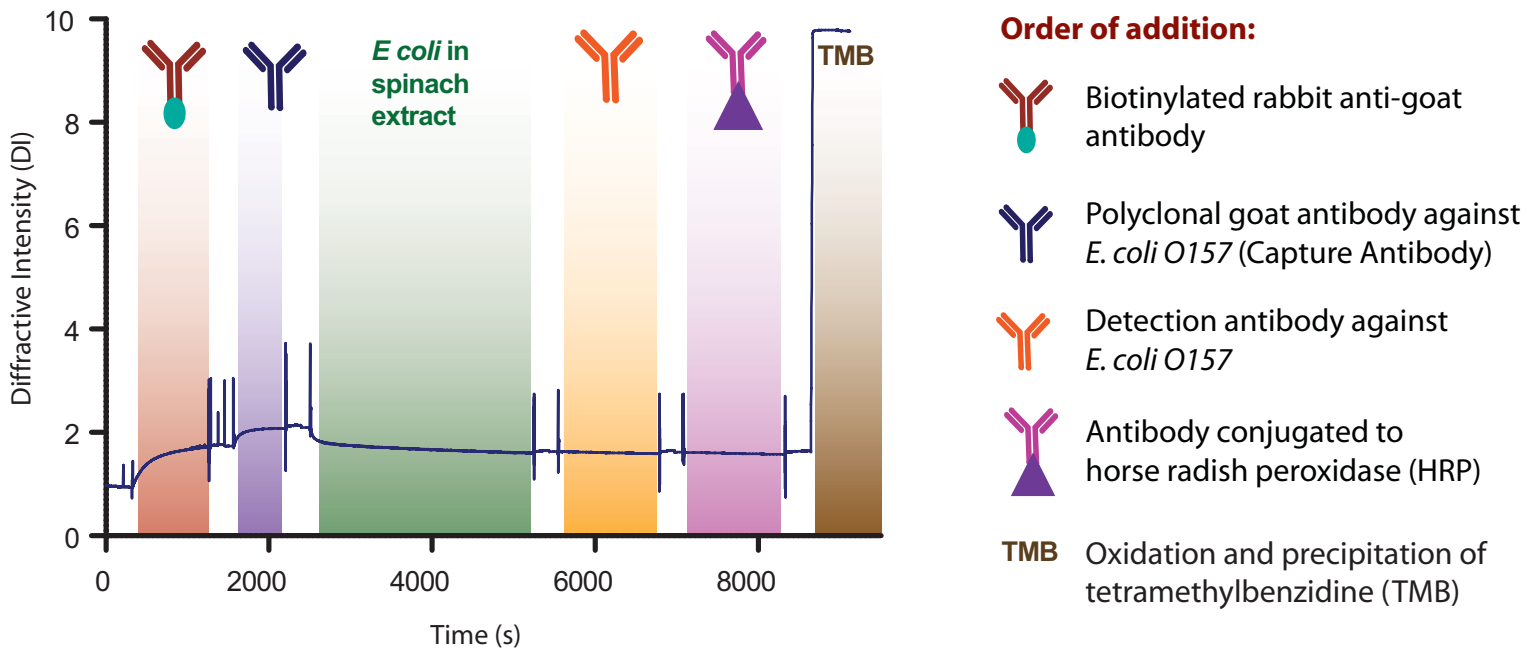


Detection of *E. coli* Bacteria by Diffractive Optics

The ability to rapidly detect bacteria in a variety of crude biological samples can significantly accelerate the diagnosis of bacterial infections as well as the identification of bacterial contamination in food and environmental samples. Current methods for detection are often labor intensive, expensive and require specialized personnel to perform making them unsuitable as rapid, on-site detection tools. However, given the large size of bacteria, they are well suited for detection using diffractive optics even when present in low titers. In the example below, *E. coli* O157 was detected in spinach extracts by real time diffractive optics using an avidin coated sensor.



Highlights:

- Rapid (under 90 minutes) and easy to use detection platform for bacteria in biological samples
- Compatible with a wide variety of crude biological samples including bodily fluids and food extracts
- No sample pre-processing or pre-culture required unlike traditional immunoassays or PCR techniques for pathogen detection
- Compatible with a variety of assay formats and amplification strategies (eg. TMB oxidation and precipitation as shown above) for higher sensitivity
- Can be multiplexed using Axela's panelPlus™ Sensors for multiple pathogen screening assays
- Potential applications for rapid infectious disease testing and food/environmental testing



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