

# Enabling Fast, Reliable, and Accessible Protein Quantification with Redox Electrochemical Detection (RED)

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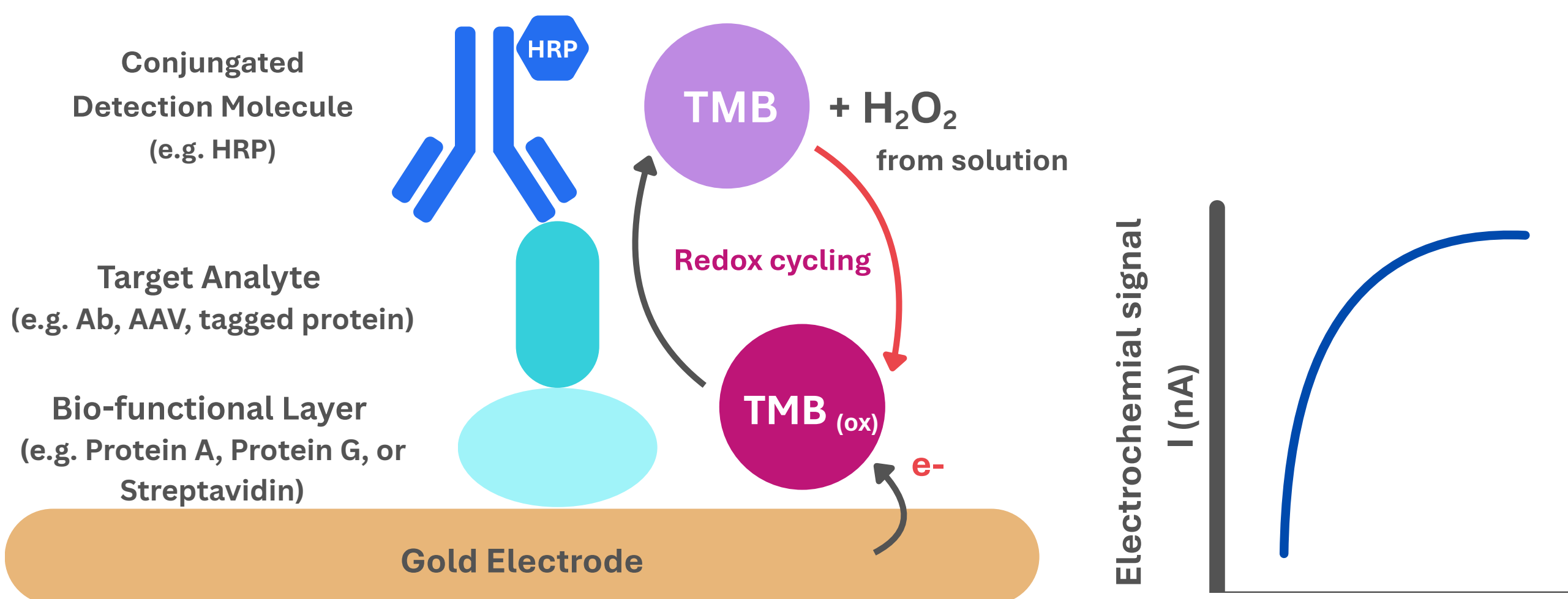
## Background

Protein quantification is essential across biologics research and development – yet current tools like ELISA, BLI, and SPR require complex workflows and may struggle with crude samples or early-stage screening. These limitations increase the demand for platforms that combine speed, simplicity, and robustness.

## Technology overview: what is RED?

**Redox Electrochemical Detection (RED)** is a sensor-based detection method that uses enzyme-mediated redox reactions to generate an electrical signal, directly measured via gold electrode sensors.

- No optics or fluidics
- Designed to tolerate crude samples
- Signal readout is direct and automated
- Supports different assay formats tailored to target biology

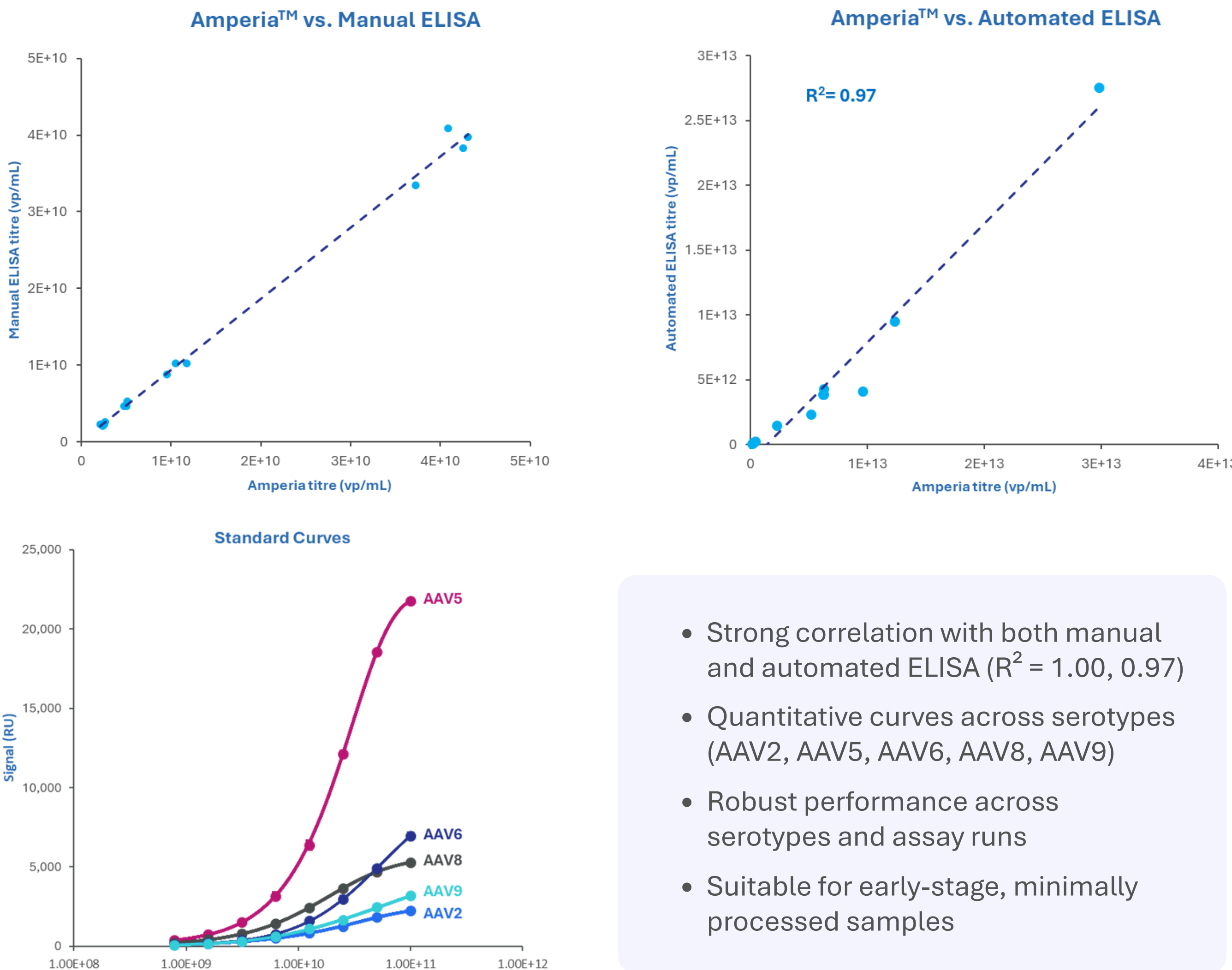


**RED** is implemented in the **Amperia™** platform – a compact benchtop system built on **patented** sensor technology, with disposable dip-style sensors and prefilled assay plates.

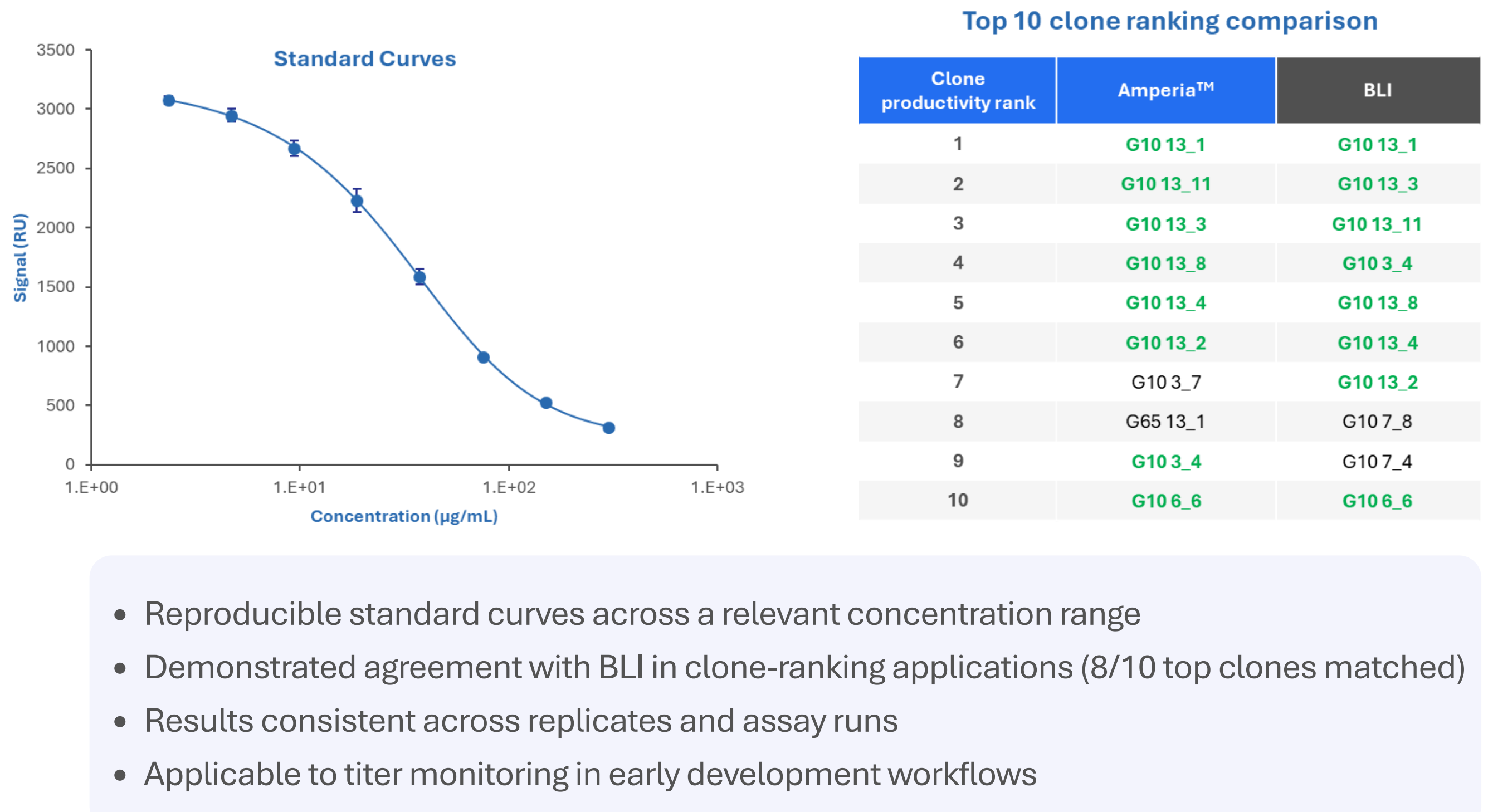


## Applications & results.

### AAV Capsid Quantification



### Monoclonal Antibodies (mAbs) Quantification




### His-Tagged Protein Quantification




## Workflow summary.

1




Prepare Assay Plate

2




Insert Plate

3




Add Sensors

4



Run Assay

5



View Results

- Simple 5-step dip-and-read process
- Easy sample loading into standard plates
- Automated sensor handling
- Built-in analysis

## Discussion & future directions.

**Amperia™** uses Redox Electrochemical Detection (**RED**) to simplify protein quantification – eliminating the need for optics or fluidics. It delivers consistent results across targets such as AAV, mAbs, and His-tagged proteins, even in crude samples.

With a compact design, low training requirement, and target-specific assay formats, it supports early screening and upstream workflows. Ongoing work aims to expand assay offerings and enable integration with automated systems.



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