FOx BIOSYSTEMS
Breaking limits in bioanalysis

APP NOTE

Looking for a faster way to monitor biotherapeutics yield from cell culture?

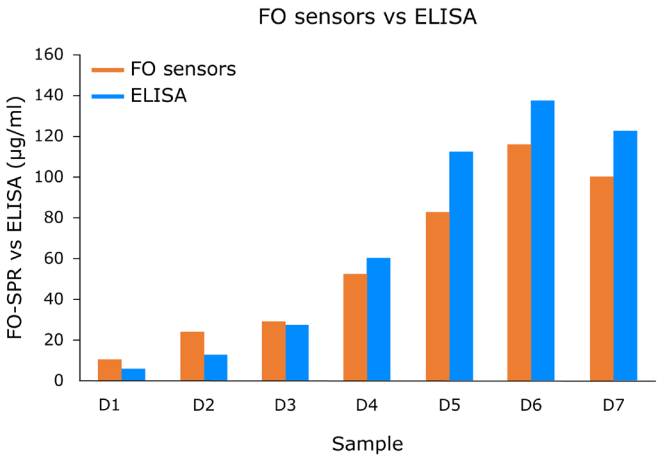
More efficient drug discovery and R&D using a dip-in assay

WHITE FOx can be used on crude samples, including cell culture media, and could be invaluable as an analysis tool for developing bioproduction processes.

As an example, WHITE FOx's dip-in fiber-optic sensors can be used to monitor concentrations of a monoclonal IgG, as shown here with (Trastuzumab (TRA) / Herceptin) produced from stably transfected CHO cells in a continuous perfusion bioreactor system.

Highlights

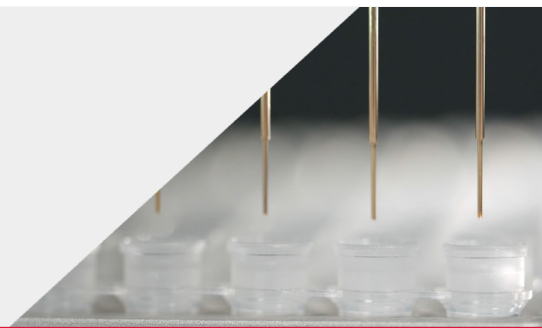
- **Samples were diluted 50- or 100-fold**
  and measured in quadruplicate
- **Quantification range**
  from 0.31 to 12.5µg/ml, here covering diluted samples from 5.8 to 139 µg/ml initial concentration.
- **Short time to result**
  in 6 to 11 minutes from sampling
- **Excellent correlation with optimized ELISA**
  (Spearman correlation 0.992 with 50x diluted samples)
- **Low non-specific binding**
  between cell culture media and capture antibodies
- **High repeatability:**
  inter-assay coefficient of variation <10%



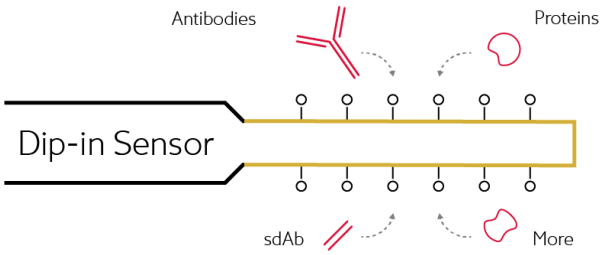
Comparison of concentrations obtained from FO assay against the anti-IgG ELISA test. Pearson correlation coefficient 0.992.

Conclusion

WHITE FOx can accurately detect and quantify biologically relevant concentrations of monoclonal antibodies in bioreactor samples with minimal processing. With results in as little as six minutes, it can be used to optimize bioreactor processes in near real time.



FOx BIOSYSTEMS has developed a convenient dip-in probe configuration to study interactions between biomolecules. WHITE FOx can accurately quantify biomolecules and measure their kinetic interactions directly in complex media, something that traditional fluidics-based systems struggle to do without extensive sample processing.



The advantages of WHITE FOx:

- **Fast:** sample to result in as little as 10 minutes*
- **Accurate:** highly comparable results with ELISA, the current routine method
- **Relevant concentration range:** quantification at typical bioreactor concentrations
- **No fluidics**
    - Minimal sample processing
    - Greatly reduced cross-contamination
- **Flexible:** sensor probes available with common surface chemistries to bind a variety of biologicals.

*when using pre-functionalized probes

Contact us

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For more details, read our white paper
"Label-free quantification in bioproduction samples."