

# Real-time, non-invasive monitoring for drug development and bioprocessing

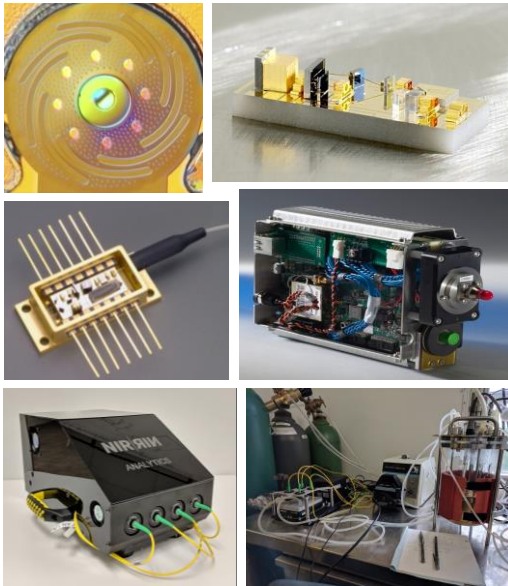
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## Problem statement / who we are

Within a drug's lifetime of discovery, development, processing and manufacturing, the monitoring of critical analytes within the aqueous medium in which it resides is of utmost importance and also represents an area needing great improvement. Off-line measurements pose contamination threats and increase time and cost.

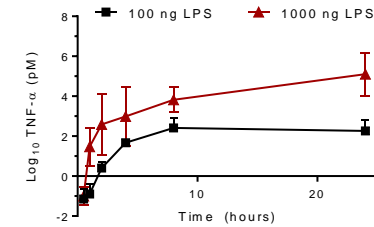
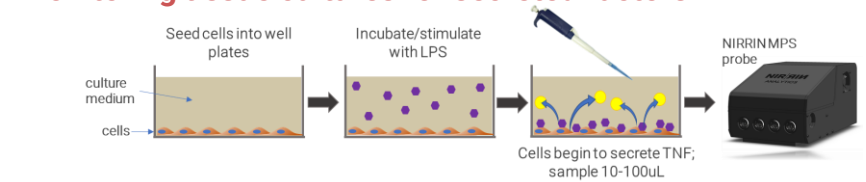
Nirrin Analytics' mission is therefore to **radically transform** the way that drugs are **developed** and **manufactured** by delivering a highly sensitive, customizable, label-free, real-time, on-line assay.

## The Technology



- **Robust, reliable** near-infrared technology with years of operating lifetime in **fielded** industrial applications
- **Novel chemometric** approach enabling **real-time aqueous solution monitoring**
- **Autoclavable, flow-based** and **static** sample interfaces
- **Non-destructive** to biological samples and **eye-safe** laser power and wavelengths
- **High resolution** (sub-nm) and **high speed** (100ms) scans
- **Parallel multiplexing** capabilities

## Monitoring tissue cultures for secreted factors



Instantaneous calculation of measured analytes, e.g., cytokines, chemokines etc., from tissue culture systems

## Real-time prediction of glucose and product protein titer in CHO bioreactors

Our propriety chemometrics package makes building models for glucose (and lactate, ammonium and glutamine), and product protein titer prediction, **simple and specific**. Models and data are maintained in the cloud and can be integrated with existing data visualization and analytics software packages.

