

NOW STARTS NOW

MAVEN

ON-LINE MONITORING AND REAL-TIME CONTROL OF GLUCOSE AND LACTATE



- Measurement
- Standby | Interval
- Calibration | Reference
- Priming
- Flushing | Cleaning
- Error
- Power

908devices
MAVEN

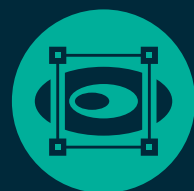
MEET MAVEN

OPTIMIZED, AUTOMIZED,
DON'T-EVEN-SWEAT-IT GLUCOSE
AND LACTATE CONTROL.

Monitoring and control of glucose and lactate concentrations during cell culture and fermentation are critical to achieve optimal process efficiency and productivity for effortless realization of PAT strategies. Real time insights into cellular metabolism are invaluable for media optimization and development of feeding and control strategies.



Detect and react to process changes in real time with on-line monitoring of glucose and lactate as often as every 2 minutes.



Develop advanced process control strategies and identify opportunities for process improvement with up to 720 glucose-lactate data points per day.



Preserve precious bioreactor material and reduce process contamination risk with sample-free analysis based on the proprietary selective flow diffusion method.



Reliable and precise biosensor-based measurement technology ensures that optimal glucose concentration can be maintained, even at very low levels.



Reusable and single-use probes and flow cells make it easy to integrate MAVEN with most types and sizes of upstream systems in both the PD lab and GMP manufacturing.



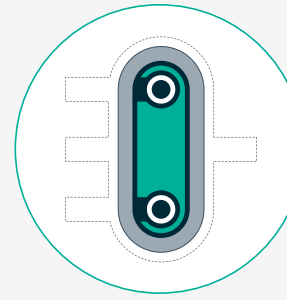
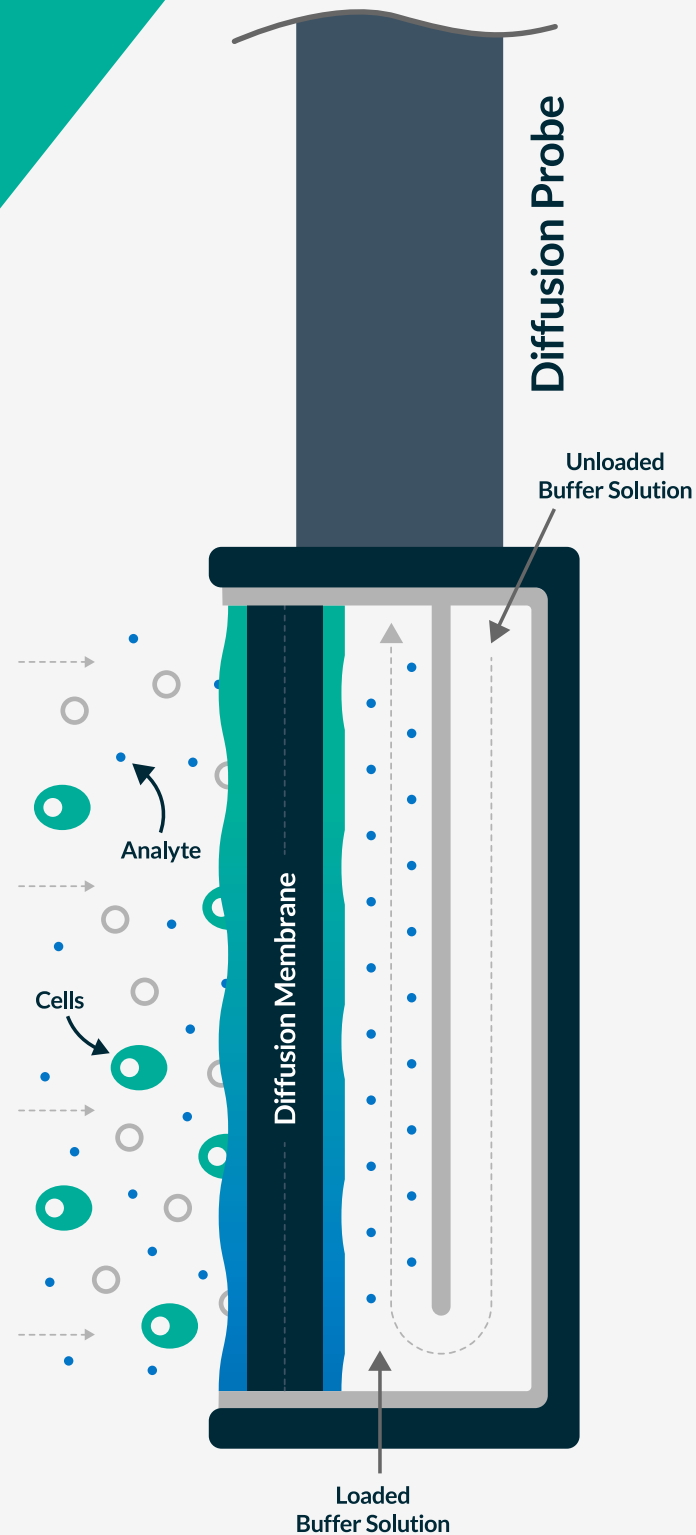
Control the feeding pump directly with the integrated PID controller or easily connect with existing process automation systems via OPC UA, Analog or Serial outputs.

DESIGNED WITH FEATURES TO MAKE YOUR DAY

KNOW EXACTLY WHAT'S HAPPENING IN YOUR BIOREACTOR, MAINTAIN CONTROL OF YOUR PROCESS, AND KEEP YOUR CELLS HAPPY.

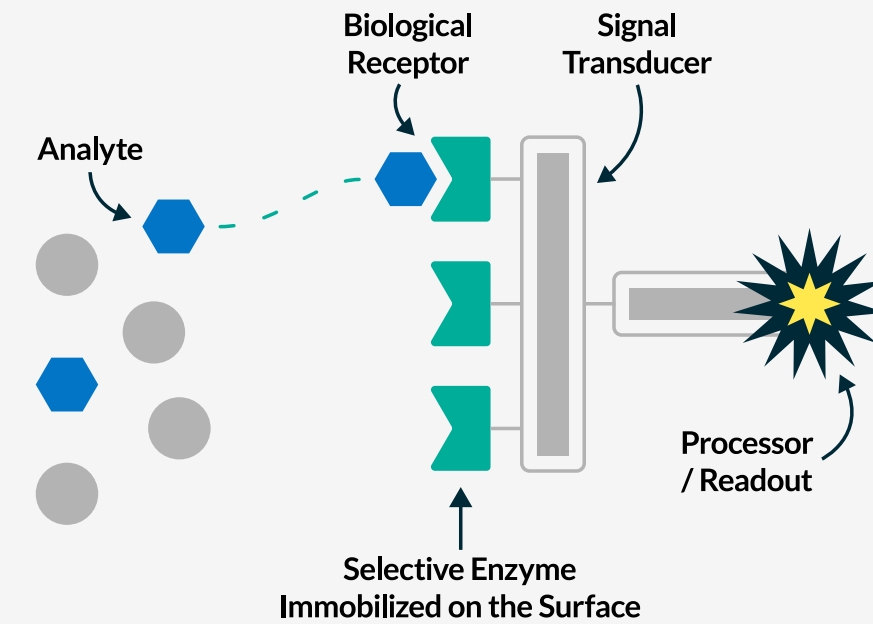
Unlike in manual or automated sampling, measurements are performed without any loss of bioreactor volume and without increased risk of process contamination.

Glucose and lactate molecules from the medium diffuse through the semi-permeable membrane into the transport buffer solution circulated between the probe and measuring cell.



HIGHLY PRECISE AND ROBUST BIOSENSORS

The biosensor's enzymatic recognition and selectivity for glucose and lactate generates an electrical signal proportional to concentration of targeted analytes.



- **Sensor type:** Enzyme-based electrochemical biosensor
- **Glucose measurement range:** From 0.01 to 40 g/L concentration
- **Lactate measurement range:** From 0.05 to 10 g/L concentration
- **Replaceable biosensor service life:** 5,000 measurements or 30 days

BE A REBEL AND REAP THE REWARDS

Combine REBEL's at-line analysis of amino acids and vitamins with MAVEN's on-line monitoring and control of glucose and lactate to get unambiguous answers where and when you need them.



HOW WILL YOU USE MAVEN?

MONITOR GLUCOSE AND LACTATE IN YOUR BIOREACTOR IN REAL-TIME.
REFINE FEEDING STRATEGIES ON THE FLY.

BIOLOGICS

Direct cellular metabolism towards higher efficiency and improve process yield and product quality.



CELL AND GENE THERAPY

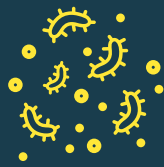
Improve CAR-T cell efficacy in vivo and promote survival and proliferation of MSCs with tight control of glucose concentration.



- ✓ Media QC
- ✓ Media Screening & Optimization
- ✓ Spent Medium Analysis
- ✓ Process Scale Up
- ✓ Process Optimization
- ✓ PAT

VIRAL VECTORS

Increase viral titer and capsid quality with dynamic feedback control of substrate feeding.



FERMENTATION

Optimize E.coli and yeast fermentation in production of recombinant proteins, plasmids, and enzymes.

INDUSTRIAL BIO

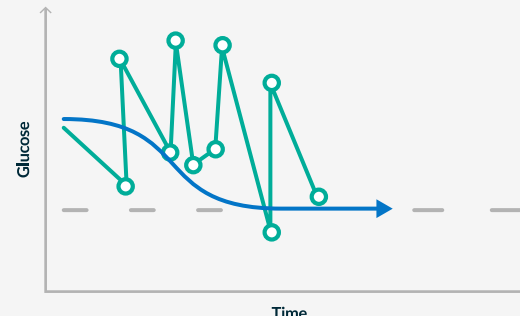
Control substrate feeding and optimize the meat cultivation process.



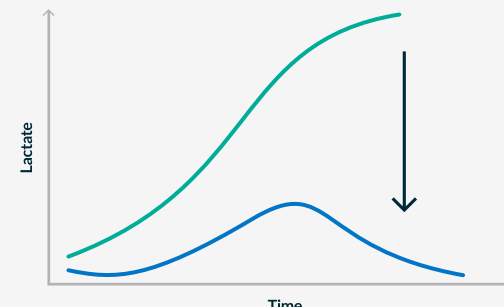
SUDDENLY, YOU'RE THE BOSS OF YOUR BIOREACTOR

Tight control of glucose-lactate concentrations enables development and implementation of dynamic feeding strategies to optimize cellular metabolisms leading to higher productivity and improved quality of biotherapeutics.

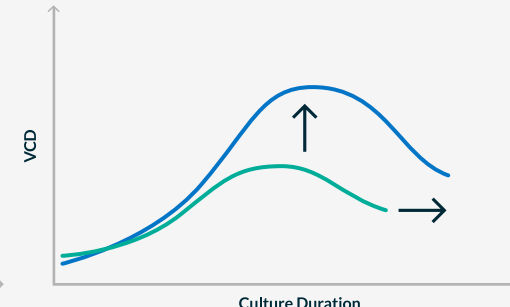
- Bolus Control of Feeding
- Dynamic Control of Feeding



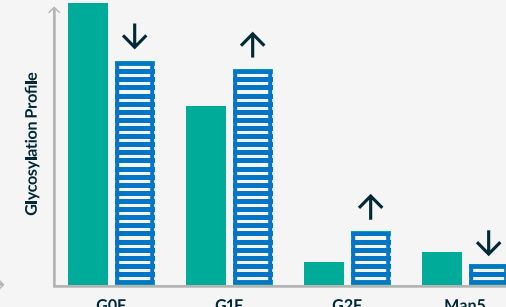
Maintain lower range of glucose concentration and minimize nutrient fluctuations



Optimize lactate metabolism and prevent growth-inhibiting lactate accumulation



Improve cell growth, increase maximum viable cell density, and total product yield

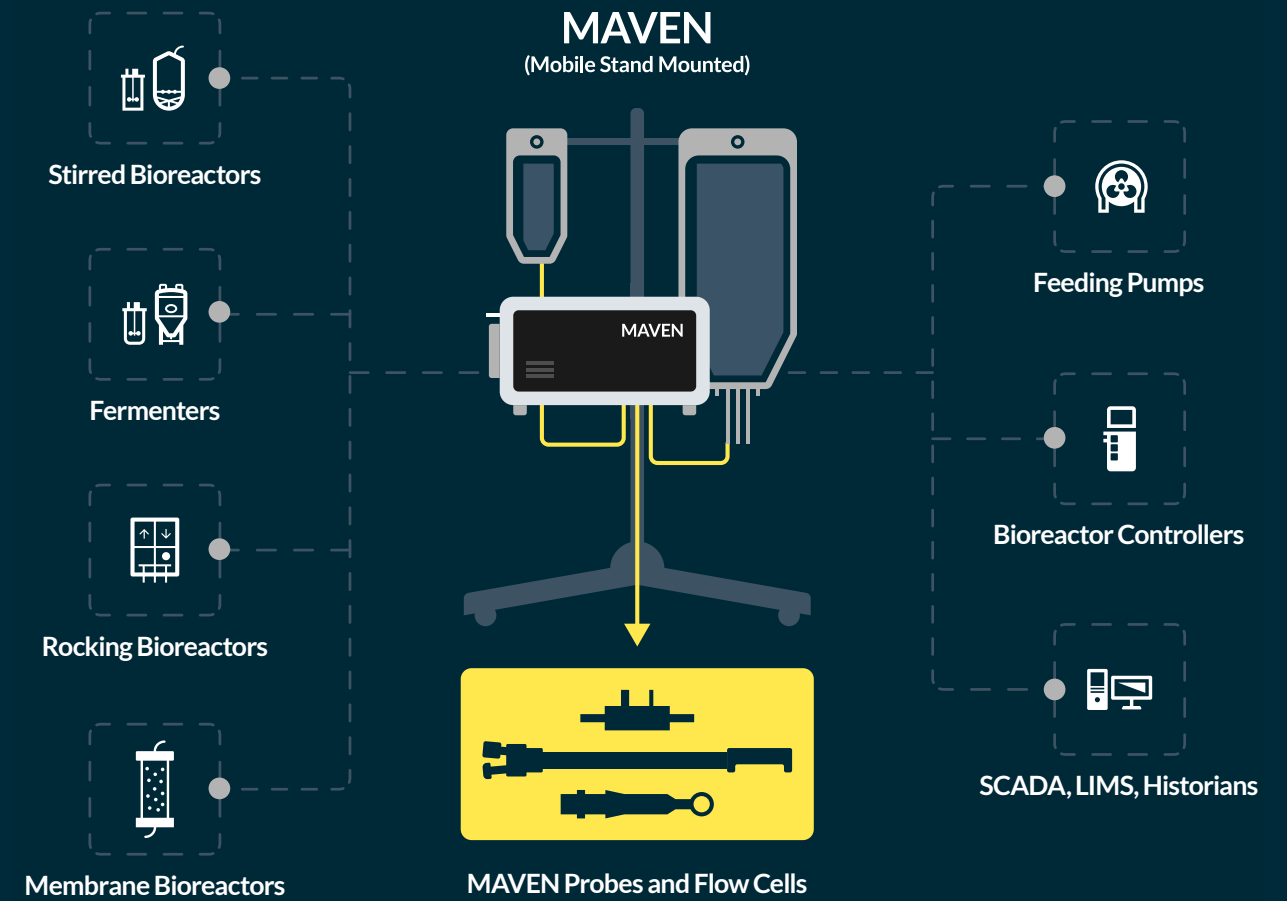


Improve product quality such as glycosylation profile and reduce unwanted glycation

MAVEN LOVES TO COLLABORATE

LIKE A GOOD LAB PARTNER, MAVEN EASILY INTEGRATES WITH YOUR EXISTING OR NEW UPSTREAM PROCESS DEVELOPMENT OR GMP MANUFACTURING SYSTEMS.

- ✓ Compatible with Most Bioreactors and Fermenters
- ✓ Automation Included
- ✓ Advanced Connectivity



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