Performance report: Glucose / Lactate

Method: Dialysis - low
Measurement range: Glucose 0.1 – 4 g/L, Lactate 0.05 – 2 g/L

TRACE Analytics

SYSTEM PERFORMANCE

These data were compiled in order to give an overview of typical system- and sensor-performance in the low concentration range using the dialysis-low sampling method. Operational temperature in the bioreactor was set to 37°C.

Linearity

By comparing the actual value with the set value typically a regression coefficient R^2 of not less than 0,9995 will be obtained (Figure 1).

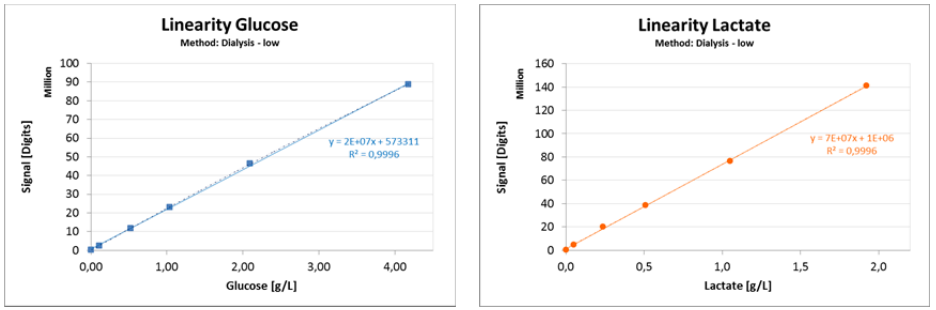

Figure 1. Linearity of Glucose (R^2=0,9996) and Lactate (R^2=0,9996)

Precision

The typical variation about the mean value is below 0,5%, except for the lower concentrations (< 1,5%) (Figure 2).

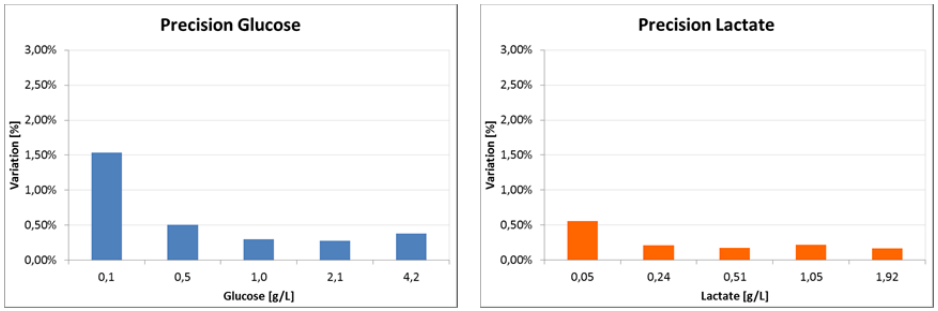

Figure 2. Precision of Glucose and Lactate readings in the dialysis-low mode

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Recovery

The recovery of the glucose and lactate values is shown in figure 3.

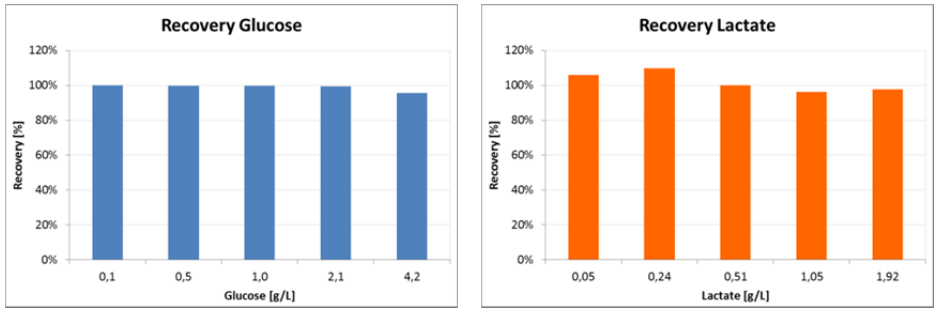

Figure 3. Recovery of Glucose and Lactate

Operational stability

Long term stability for the Glucose/Lactate biosensors is guaranteed for 5.000 measurements or 14 days. Figure 4 shows a typical profile during the load test within the QA procedure over 5.000 assays (every two minutes = 7 days).

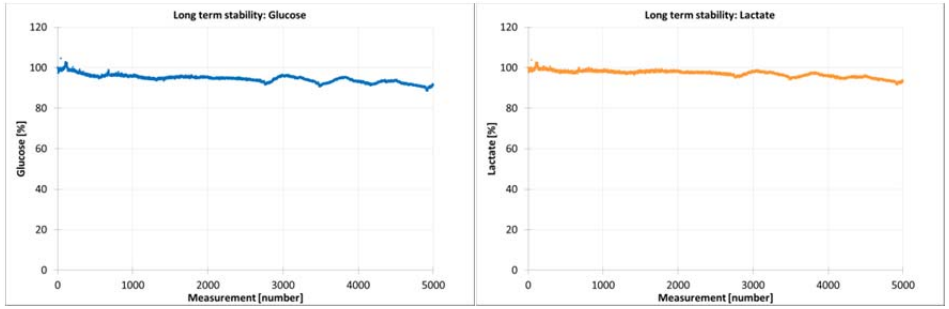

Figure 4. Load test of Glucose and Lactate sensors

In a typical cell culture application the measurement frequency is set to 30 min with one automatic recalibration per day. Sensor drift is less than 0,1% per hour.

Shelf life

Glucose-/Lactate-Sensors have a shelf life of at least 12 months at room temperature.