DSI™
Better Data. Better Science.

The Better Method for Glucose Monitoring

Continuous Glucose Telemetry

DSI's automated system monitors and collects continuous glucose data from conscious, freely moving mice and rats. Get high quality data, unimpeded by stress artifact, so you can make improved decisions from a complete data set.

Proven benefits

- Telemetry is among the most humane means of monitoring
- Fewer blood draws saves time and improves welfare
- Fewer animals are required (sample size reduction)
- Continuous stress-free data collection reduces variability
- Quantify glucose homeostasis & glycemic variability

Telemetry is the preferred method

"[Telemetry] has been applied to address unresolved questions in which conventional indirect measurements had yielded inconsistent and often conflicting data."

— AHA Scientific Statement*

"Coming from someone who has spent nights sleeping on the floor of the lab to collect blood glucose samples, I can tell you that this [continuous glucose telemetry] is already changing my work/life balance."

—DSI continuous glucose telemetry customer

*Recommendations for Blood Pressure measurement in Humans and Experimental Animals. Hypertension. 2005;45:299-310.

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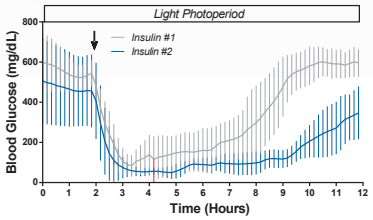
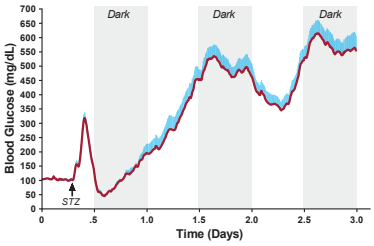
Research Applications



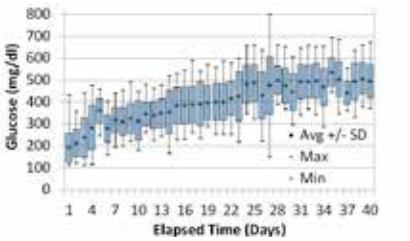
Insulin Dose Response Graph

Data from two groups of six Type 1 Streptozotocin (STZ) rats highlighting the differences in blood glucose levels prior to and following dosing with a long acting insulin. Quantifying the dose response as a function of time enables improved comparisons and the option to further investigate mechanisms.



Streptozotocin (STZ) induction of Type 1 Diabetes Mellitus (T1DM)

Onset of T1DM, and subsequent events, in a group of 11 rats following STZ dosing. This data enables intervention in the hypoglycemic period, if needed, or redosing of animals that do not convert.



Disease Progression in a db/db Mouse

40 days of analyzed data depicting progression of diabetes. Significant maximum and minimum on day 27 are due to fasted glucose tolerance test. The continuous data could also be analyzed for daily light and dark periods throughout or quantification of glucose homeostasis between days 29 and 40.

Specifications	
Intended species:	mouse and rat
Parameters measured:	blood glucose, body temperature & activity
Surgical placement of sensor:	in mice the sensor is placed via the left carotid in rats the sensor is placed in the descending abdominal aorta
Surgical placement of transmitter body:	in mice the transmitter body is placed either subcutaneously in the right flank or intraperitoneally in rats the transmitter body is placed intraperitoneally
Warranted sensor life:	28 days from implantation. Frequently functions 6-8 weeks.
Implant life:	2 months
Warranted battery life:	6 weeks; frequently functions 8 weeks or longer
Glucose sensing range:	10-750mg/dL (0.5-42 mmol/L)
Sample rate:	1 Hz
Implant weight:	2.2 grams
Implant volume:	1.4 cc
Minimum animal weight:	Mouse = 19 grams SQ, 23 grams IP. Rat = 175 grams
Maximum cage size:	42 x 42 x 18 cm
Calibration reference:	Nova StatStrip® Xpress (or equivalent)

References

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The FASEB Journal, vol. 28 no. 1 Supplement 1051.12 , April 2014

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R. Brockway, T. Coskun, L.S. O'Farrell, P. Haefner, K. White, C.V. Jackson, R.G. Peterson
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Robert Brockway, Justin Van Hee, Kimberly Holliday-White, Heather Bogie, Kathryn Lillegard
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R. Dechend, C. Schnell. *Webinar from http://insidescientific.com/webinars/item/378-continuous-glucose-monitoring-diabetes-obesity-metabolic-research-rodents-data-sciences, November 18, 2015*

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