



# Total Insulin

## Northern Lights<sup>®</sup>

### MBeads Assay

# Total Insulin MBeads Assay

## High-throughput tool

Under *in vitro* conditions, the number of data points acquired per study is increased dramatically. Thus, a high-throughput screening method using magnetic beads is an optimal option for the analysis of samples produced by perfusion systems to understand  $\beta$ -cell kinetics *in vitro*.

Mercodia's new high-throughput tool uses surface-activated magnetic agarose beads coupled to our antibodies increasing the detection surface of the assay, making it a great tool for increased sensitivity in small sample volumes.

The assay allows the analysis of multiple samples simultaneously, decreasing the cost per data point and the amount of sample required. Making possible the analysis of other analytes in volumelimited samples.

## Insulin

Insulin is the principal hormone responsible for the control of glucose metabolism. For better understanding and improving islet analyses, functionality, and signaling, new techniques are constantly developed. These techniques allow the study of multiple data points in different settings.

Total Insulin MBeads Assay provides a multi-species chemiluminescent method for the quantitative determination of insulin in perfusion or *in vitro* samples.

## Higher detection range

Total Insulin MBeads Assay has been developed with a greater detection range allowing the measurement of higher concentrations of insulin, helping you avoid excruciating sample dilutions.

Your challenges	Mercodia solutions
Several samples	✓ High-throughput (96 and 384 well plates)
Sensitivity	✓ High reproducibility and no dilutions required
Time	✓ Short duration of the assay
Sample volume	✓ Small sample volume required (5 or 10 $\mu$ L)
Flexibility	✓ Adapted for manual or automatic procedures



## Sample types

At Merckodia we have evaluated several sample types to fulfill the customer's needs. We understand different research has different goals and needs. The Total Insulin MBeads Assay has been evaluated with the following samples types:

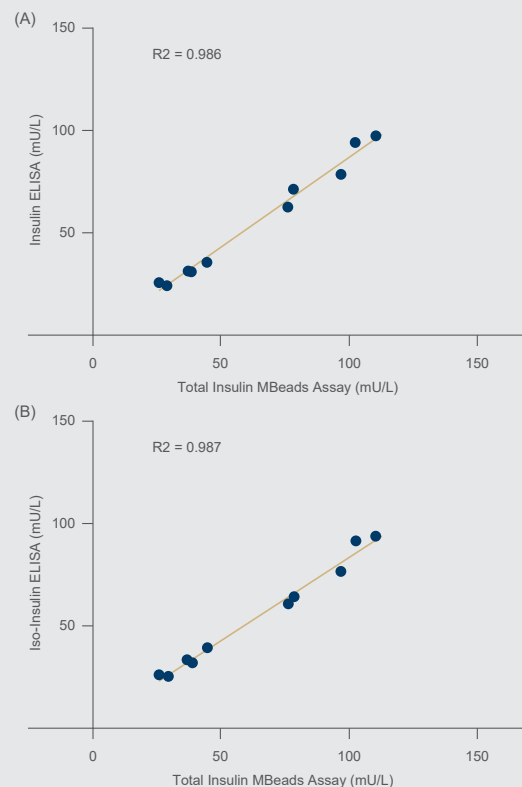
- Cell media
- Cell lysates
- Serum

## Perfusion systems

Perfusion systems are widely used to understand  $\beta$ -cell kinetics *in vitro*, and they play a key factor in the elucidation of islet physiology and pathophysiology. Islet perfusion involves the exposure of islets to a continuous flow of media enriched with nutrients, gas, or reagents mimicking physiological conditions or other controlled experimental settings. Moreover, this technique is constantly improved by the development of more accurate and sophisticated perfusion systems.

Comparison between Total Insulin MBeads Assay and Insulin ELISA (A), and Iso-Insulin ELISA (B). Samples were analyzed and compared between methods. The results show a high correlation between the values acquired by the Total Insulin MBeads Assay and the Insulin ELISA and Iso-Insulin ELISA.

## Assay comparison



## Ordering information

Catalog no.	Product name	Sample volume	Range
10-1353-01	Total Insulin Northern Lights MBeads Assay	5 µL*	23.3–2500 mU/L Human (≈1.0–108,7 ug/L) Mouse (≈1.49–160 ug/L)

\*Alternative 10 µL protocol available on [merck.com/merck/merck-diagnostics/merck-diagnostics-products](https://www.merck.com/merck/merck-diagnostics/merck-diagnostics-products).  
If required, a 96 well bio-magnetic plate can be purchased, requesting item 15-1000-01.

## Northern Lights

Northern Lights® is a product line for chemiluminescent detection. This sensitive detection makes it possible to push the measuring range to different concentrations allowing it to detect lower and higher levels, avoiding dilution of perfusion required for conditioned media at extremely high concentrations.

For other products visit [merck.com/merck/merck-diagnostics/merck-diagnostics-products](https://www.merck.com/merck/merck-diagnostics/merck-diagnostics-products)

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