

Total Insulin Northern Lights® MBeads Assay



10-1353-01

For Research Use Only / Not for Use in Diagnostic Procedures

Reactivity
Human / Mouse

Samples tested
Cell media (perfusion samples, conditioned media)

Predicted reactivity based on homology
Rat

Samples predicted to work
Cell lysates, serum

Detection Range
23.3 – 2500 mU/L

Human ≈1.0 - 108.7 µg/L

Mouse ≈1.49 - 160 µg/L

Application

Total Insulin Northern Lights® MBeads Assay is intended to be used for the measurement of insulin in conditioned media from perfusion experiments or other in vitro cultures from cells derived from human and mouse specimens.

Storage and expiration date

The recommended storage temperature is 2–8°C. The expiry date for the complete kit is stated on the outer label.

Included reagents	Amount	Storage temperature
MBeads Antibody	1	2–8°C
Calibrator 0	1	2–8°C
Calibrators 1-7	7	2–8°C
Control	1	2–8°C
Enzyme conjugate 44X	1	2–8°C
Assay Buffer	1	2–8°C
Wash Buffer 21X	2	2–8°C
Substrate Reagent A	2	2–8°C
Substrate Reagent B	2	2–8°C

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Principle of the procedure

Total Insulin Northern Lights MBeads Assay is a solid phase two-site enzyme immunoassay based on the sandwich technique, in which two monoclonal antibodies are directed against separate antigenic determinants on the insulin molecule. A simple washing step removes unbound enzyme-labeled antibodies. The bound conjugate is detected by the reaction with the chemiluminescent substrate. A luminescence plate reader is used to read the intensity of light generated.

In the Total Insulin Northern Lights MBeads Assay, the surface-activated magnetic agarose beads are coupled to a monoclonal mouse antibody against insulin. This antibody grants the detection of several mammalian insulins. This assay allows an increased coverage and binding, making it an ideal tool for high through-put studies to detect insulin in conditioned media derived from cells (i.e., islets isolated from the human pancreas).

Material required but not provided

- Pipettes with appropriate volumes (automatic multichannel or repeating pipettes preferred for the addition of MBeads Mix or other working solutions)
- Tubes, beakers, and cylinders for reagents preparation
- Vortex mixer
- Reagent reservoirs
- Microplate reader for chemiluminescence
- Microplate orbital shaker (recommended speed is 1350 cycles per minute)
- Magnetic bead-separator for 96 well plates
- Black 96 well plate

Optional:

- Microplate washing device that also supports magnetic bead washing using a biomagnetic bead separator.

Note! If another plate format is being used (i.e., 384 well plate), a suited magnet for that specific plate is required

Limitations

The assay can give higher variations at low and high concentrations of the measuring range. If your sample is in the lower range it is recommended to use a different tool (i.e., the Mercodia Insulin ELISA 10-1113-01). If your sample is in the higher range, some dilutions could be needed.

Values and interpretations

The assay values can be interpreted as follow:

Calibrators	Human		Mouse	Rat
	mU/L	µg/L	µg/L	µg/L
Cal 1	23	1	1.47	0.90
Cal 2	33	1.43	2.11	1.29
Cal 3	110	4.78	7.04	4.29
Cal 4	242	10.5	15.5	9.44
Cal 5	527	22.9	33.7	20.6
Cal 6	1150	50	73.6	44.9
Cal 7	2500	108.7	160	97.5

NOTE: These values are an example of how to interpret the results given by the calibrators. Values from the calibrators might vary from lot to lot. For conversion factors please see the Directions for Use of the Total Insulin Northern Lights® MBeads Assay.

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