Insulin Blood Level HAS_INS_002

Purpose

The insulin concentration in the blood is an important indicator of diabetes.

Ontological description: abnormal circulating insulin level [MP:0001560]; increased circulating insulin level [MP:0002079]; decreased circulating insulin level [MP:0002727].

Experimental Design

Age of animal: Males at 33,57 and 72 weeks.

Sexual dimorphism: Yes.

Equipment

1. ELISA plate reader / MSD Sector Imager
2. Vortex
3. Refrigerated centrifuge
4. Eppendorf tubes
5. Calibrated Pipettes

Procedure

1. Blood is collected by the relevant blood collection procedure (see IMPC protocol "Blood collection by retro-orbital puncture"). Blood is collected in lithium heparin tubes and the samples are kept on ice for a maximum of 2 hours prior to isolation of the plasma.
2. Blood samples are centrifuged at 5,000 x g for 10 minutes at 8ºC and the plasma removed and aliquoted for analysis or for freezing (-70ºC).
3. Plasma samples are subsequently defrosted and the required amount of sample is used to perform the analysis (e.g. by ELISA or MSD).

Notes

Blood collection for Insulin Blood Level is performed as a non-fasting, terminal procedure.

Data QC

1. Plasma samples must be free of Fibrin clots in order to be analysed.
2. Badly hemolysed samples should not be included in the analysis.

Example Metadata

Metadata	Example	Required for data upload	Required for data analysis
Type of kit	The kit used for analysing the blood samples. E.g. Mouse Insulin kit	YES	NO
Kit manufacturer	Manufacturer of the kit. E.g. MORINAGA (Yokohama, Japan)	YES	NO
Kit lot number		YES	NO
Equipment ID	ID of the machine used when more than 1 is used having same model and manufacturer. E.g. machine 1, machine 2, machine Minnie, machine Mickey Mouse, etc.	YES	NO
Equipment manufacturer	Manufacturer of the equipment. E.g. Thermo scientific.	YES	YES
Equipment model	Model of the equipment. E.g. Multiskan JX.	YES	YES
Blood collection tubes	The tubes used for blood collection. E.g. Sarstedt Li-Heparin gel tubes or Kabe Labortechnik Lithium heparin coated tubes.	NO	YES
Anesthesia used for blood collection	The anesthetic used during blood collection. E. g. Isofluorane.	YES	YES
Method of blood collection	Concise description of the method used for blood collection. E.g. retro-orbital puncture.	YES	YES
Anticoagulant	Anticoagulant used for blood collection. E.g. Li-Heparin.	YES	YES

Date and time of blood collection	Time of day for collection is in the morning, starting no earlier than 07: 30. E.g. Year, month, day, time.	YES	YES
Date of measurement	The day of blood analysis. Year, month, day.	YES	YES
Sample status	Indicate if the sample were frozen (analysis on the same day of collection not possible) or fresh (analysis on the same day of collection). E.g. Fresh/Frozen.	YES	YES
Samples kept on ice between collection and analysis	Yes/No.	YES	YES
Plasma dilution	Dilution is highly discouraged but if necessary indicate here. E.g. "No dilution" or 1:2. Note that results submitted to DCC are assumed to be already corrected for any dilutions made.	YES	YES
Replicates	Please specify whether samples were measured once, in duplicate or in triplicate. E.g. 1 or 2 or 3.	YES	NO
ID of blood collection SOP	ID of the protocol followed for blood collection. Can be a centre specific protocol. E.g. ESLIM_024_001.	YES	YES
Hemolysis status	The gauged degree of hemolysis. E. g. slight/moderate/marked.	NO	YES
Blood collection experimenter ID	An ID of any format to be used coherently both inside the same procedure and for all procedures indicating the experimenter who collected the blood. E.g. Harw_001, or 1/2/3.	YES	NO

Blood analysis experimenter ID	An ID of any format to be used coherently both inside the same procedure and for all procedures indicating the experimenter who analyzed the blood. E.g. Harw_001, or 1/2/3.	YES	NO
Date equipment last calibrated	Most recent date in which the equipment (or any part of) used in the procedure was subject to a calibration event.	NO	NO

Parameters and Metadata

Insulin HAS_INS_001_001 | v1.1

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** true

Unit Measured: ug/L

Description: insulin

Type of kit HAS_INS_002_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: type_of_kit

Kit manufacturer HAS_INS_003_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: kit_manufacturer

Kit lot number HAS_INS_004_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: kit_lot_number

Equipment ID HAS_INS_005_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: equipment_id

Equipment manufacturer HAS_INS_006_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: equipment_manufacturer

Equipment model HAS_INS_007_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: equipment_model

Blood collection tubes HAS_INS_008_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

Description: blood_collection_tubes

Anesthesia used for blood collection HAS_INS_009_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: anesthesia_used_for_blood_collection

Method of blood collection HAS_INS_010_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: method_of_blood_collection

Options: Cardiac puncture, Retro-orbital puncture, Heart puncture, Jugular vein, Tail vein,

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Anticoagulant HAS_INS_011_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: anticoagulant

Options: No, Lithium Heparin, Sodium Heparin, Heparin,

Date of procedure HAS_INS_012_001 | v1.1

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: Date/time

Description: date_and_time_of_blood_collection

Date of measurement HAS_INS_013_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Unit Measured: Date

Description: date_of_measurement

Sample status HAS_INS_014_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: sample_status

Options: Fresh, Frozen,

Samples kept on ice between collection and analysis HAS_INS_015_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: samples_kept_on_ice_between_collection_and_analysis

Options: Yes, No,

Plasma dilution HAS_INS_016_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Description: plasma_dilution

Replicates HAS_INS_017_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: replicates

Options: 1, 2, 3,

Hemolysis status HAS_INS_019_001 | v1.0

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

Description: hemolysis_status

Options: Slight, Moderate, Marked,

Blood collection PIL number HAS_INS_020_001 | v1.1

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: blood_collection_experimenter_id

Blood analysis experimenter ID HAS_INS_021_001 | v1.0

procedureMetadata

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Description: blood_analysis_experimenter_id

Fasting prior to test HAS_INS_022_001 | v1.1

procedureMetadata

Req. Analysis: true **Req. Upload:** true **Is Annotated:** false

Options: Yes, No,

Length of fast HAS_INS_023_001 | v1.1

procedureMetadata

Req. Analysis: true **Req. Upload:** false **Is Annotated:** false

Unit Measured: Hours

Procedural comments HAS_INS_018_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false

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Body Weight HAS_INS_024_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** true **Is Annotated:** false

Unit Measured: g

Description: body_weight

General comments HAS_INS_025_001 | v1.0

simpleParameter

Req. Analysis: false **Req. Upload:** false **Is Annotated:** false