Heart Weight IMPC_HWT_001

Purpose

To evaluate cardiac size using heart weight and body weight.

Experimental Design

- **Minimum number of animals :** 7M + 7F
- **Age at test:** Week 16

Equipment

- fine forceps
- surgical scissors
- fine surgical scissor
- kim wipes (tissues) or surgical compress
- laboratory balance
- labelled jar with fixative
- corkplate or wax board
- pins
- jar containing tap water to rinse the tools

Procedure

Methods and procedures used not including center-specific data entry methods.

1. Sacrifice the mouse

2. Weigh and record total body weight

3. Place mouse on its back and pin the mouse onto board with extended extremities (inner side of hands and foot)

4. Wipe or wet the mouse with 70% ethanol to control hair and dander

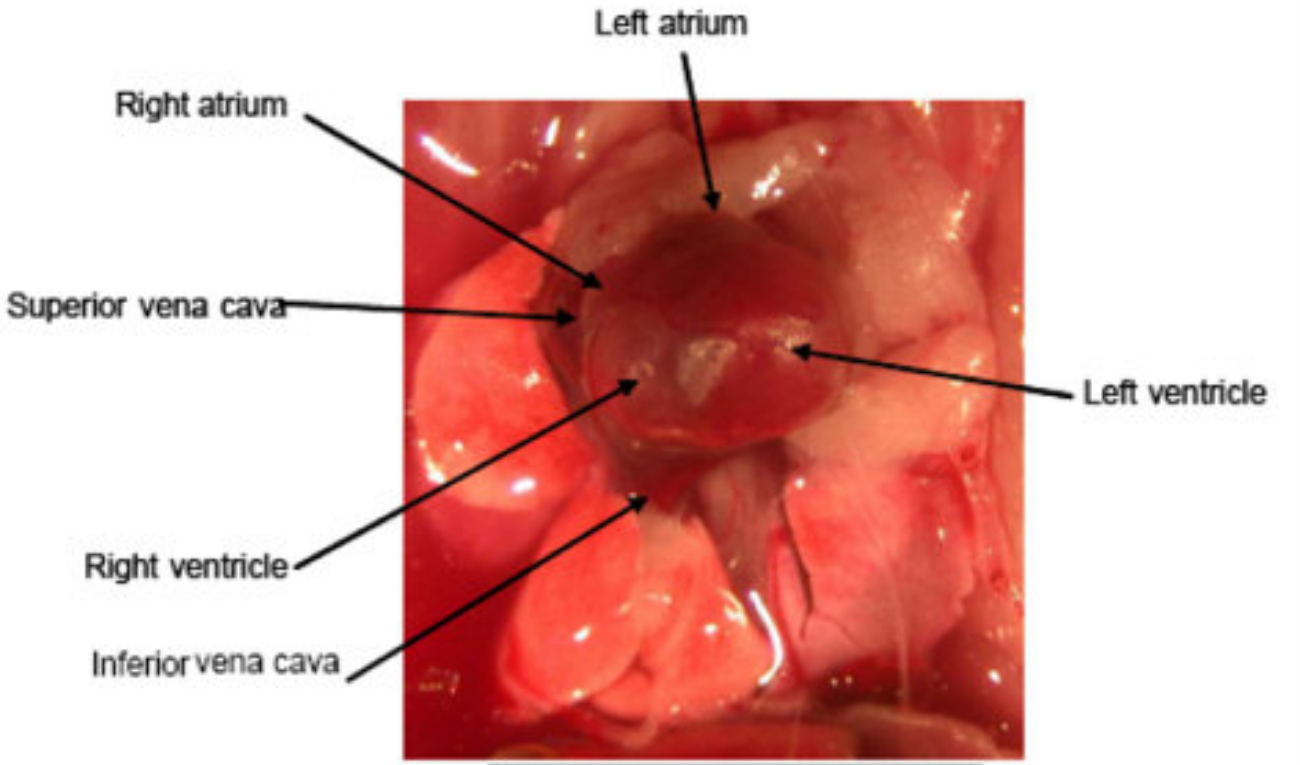
5. Option A (for mice that are undergoing complete necropsy):

- Proceed with a complete necropsy and tissue collection according to Centre-specific technical SOP including removal of the heart by dissecting the aortic root immediately above the aortic valves and the superior vena cava above the atria
- Remove adjacent mediastinal fat pads from the excised heart carefully with forceps
- Empty heart blood by tapping the heart on a kim wipe (absorbent pad) or surgical compress. Repeat until the heart is totally dry

- Weigh the heart, record the weight in the Centre-specific database, and place the heart in fixative

6. Option B (for mice that are not undergoing complete necropsy):

- Open the skin in the ventral midline and in the direction of the extremities and extend cut to hands and feet
- Open the muscular abdominal wall in the midline and along the lower margin of the rib cage with small forceps
- Open rib cage by removing the sternum and adjacent ribs
- Remove the heart by dissecting the aortic root immediately above the aortic valves and the superior vena cava above the atria
- Remove adjacent mediastinal fat pads from the excised heart carefully with forceps
- Empty heart blood by tapping the heart on a kim wipe (absorbent pad) or surgical compress. Repeat until the heart is totally dry
- Weigh the heart and record the weight in the Centre-specific database
- Discard the heart



In situ view of the heart

Notes

All data are collected at a local workstation in the necropsy room (attached to a digital balance) and uploaded to the Centre-specific pathology data capture system.

Data QC

Mouse weight between 5 grams and 150 grams

IMPC Parameters (+ontology annotations)

Weight (in mg)

Data Analysis, annotation and display (+statistics)

Statistics: ANOVA/Wilcoxon test using normalized heart weights (for body weight) displayed in boxplot

Parameters and Metadata

Experimenter ID IMPC_HWT_003_001 | v1.0

procedureMetadata

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

Description: experimenter

Method of sacrifice IMPC_HWT_005_001 | v1.1

procedureMetadata

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

Description: sacrifice

Options: Isoflurane overdose, Exsanguination, Carbon dioxide, Avertin, Ketamine (100mg/kg)/Xylazine (10mg/kg), Ketamine(100mg/kg)/ Xylazine (10mg/kg)/ Antisedan (1mg/kg), Ketamine (110mg/kg)/Xylazine (11mg/kg), Ketamine (110mg/kg)/Xylazine (11mg/kg)/ Antisedan (1mg/kg), Pentobarb (0.1ml), Anesthetized, None, Ketamine (137mg/kg)/Xylazine (6.6mg/kg), Cervical dislocation, Cardiac puncture,

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Equipment ID IMPC_HWT_006_001 | v1.0

procedureMetadata

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

Description: equipment_name

Body weight IMPC_HWT_007_001 | v1.3

simpleParameter

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

Unit Measured: g

Description: body_weight

Heart weight IMPC_HWT_008_001 | v1.2

simpleParameter

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

Unit Measured: mg

Description: heart_weight

Date equipment last calibrated IMPC_HWT_009_001 | v1.2

procedureMetadata

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

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Equipment manufacturer IMPC_HWT_010_001 | v1.0

procedureMetadata

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

Options: Ohaus, Denver Instrument, Mettler Toledo, A & D, Sartorius AG Germany, Kern, Radwag,

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Equipment model IMPC_HWT_011_001 | v1.0

procedureMetadata

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

Options: Adventurer Pro, AV2101, TP-114, PG3001-S, HR-120, TE212, P-403, AV212C, GF-200, AV213C, Scout Pro SPU123, QUINTIX124-1S, MS104S, AB104-S, Adventurer AX223/E, EMB 200-2, ENTRIS 423-1S, 201-10, BCE124I-1SJP,

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Date of sacrifice IMPC_HWT_001_001 | v1.0

procedureMetadata

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

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Tibia length IMPC_HWT_002_001 | v1.1

simpleParameter

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

Unit Measured: mm

Description: tibia_length

Heart weight normalised against body weight IMPC_HWT_012_001 | v1.0

simpleParameter

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

Derivation: div('IMPC_HWT_008_001', 'IMPC_HWT_007_001')

Heart weight normalised against tibia length IMPC_HWT_013_001 | v1.3

simpleParameter

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

Derivation: div('IMPC_HWT_008_001', 'IMPC_HWT_002_001')