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 scissors
- 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

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


Description: experimenter

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**Method of sacrifice** IMPC_HWT_005_001 | v1.1
procedureMetadata


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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Procedure Metadata

Description: equipment_name

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**Body weight** IMPC_HWT_007_001 | v1.3

SimpleParameter


Unit Measured: g

Description: body_weight

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**Heart weight** IMPC_HWT_008_001 | v1.2

SimpleParameter


Unit Measured: mg

Description: heart_weight
Date equipment last calibrated  IMPC_HWT_009_001  | v1.2

Required Analysis: false  Required Upload: false  Is Annotated: false

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Equipment manufacturer  IMPC_HWT_010_001  | v1.0

Required Analysis: true  Required 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

Required Analysis: true  Required 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
**Tibia length** IMPC_HWT_002_001 | v1.1

*simpleParameter*

- **Unit Measured**: mm
- **Description**: tibia_length

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**Heart weight normalised against body weight** IMPC_HWT_012_001 | v1.0

*simpleParameter*

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

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**Heart weight normalised against tibia length** IMPC_HWT_013_001 | v1.3

*simpleParameter*

- **Derivation**: div('IMPC_HWT_008_001', 'IMPC_HWT_007_001')
Derivation: \texttt{div('IMPC\_HWT\_008\_001', 'IMPC\_HWT\_002\_001')}