

# Gross Pathology and Tissue Collection IMP C\_PAT\_002

## Purpose

To perform a complete necropsy to detect and record abnormal external findings and macroscopic alterations in internal and external organs, record body and heart weights (see IMPC Heart Weight SOP), and collect a standardized list of tissues for fixation with or without further processing (see non-mandatory IMPC Tissue Embedding & Block Banking SOP).

## Experimental Design

- **Minimum number of animals** : 2M + 2F
- **Age at test**: Week 16

## Equipment

- Corkplate or wax board
- pins
- jar containing tap water to rinse tools
- labelled container with fixative
- fine scissors
- bigger scissors
- forceps
- small spatula
- scalpel
- laboratory balance

## Procedure

1. Sacrifice the mouse
2. Weigh and record total body weight (if not done separately)
3. Place mouse on its back and pin the mouse onto board with extended extremities (inner side of hands and foot)
4. Wipe or spray the mouse with 70% ethanol to control hair and dander
5. Proceed with a complete necropsy and tissue collection according to Center-specific technical SOP but be sure to collect the IMPC 'Tissue Collection List' (below) and remove the heart and record its weight according to the IMPC Heart Weight SOP. Individual Centers may collect any additional tissue according to Centre-specific technical SOPs.
6. Capture any images of abnormal findings and save images in Centre-specific database

7. Place all tissue collected in a labelled jar containing a sufficient volume of fixative (minimum of 10:1 fixative to tissue)
8. Record all abnormal findings in a Center-specific database using the standardized IMPC Gross Pathology ontology:
  1. MA ontology terms for location/topography
  2. MP ontology terms for presence/absence/large/small/abnormal
  3. PATO ontology terms for descriptors (size, shape, colour, consistency, distribution of lesions)

## Notes

Banking of the fixed tissue for long-term storage is according to Centre-specific SOPs (including storage fixative). Options for long-term storage of the fixed tissue include:

- Store in labelled jar in wet fixative for future use or requests
- Trim, process, and embed fixed tissue in paraffin blocks (store or discard tissue not trimmed in)
- Trim, process, and embed fixed tissue in paraffin blocks followed by microtomy and staining of sections on glass slides (store or discard tissue not trimmed in)

## Data QC

Images of significant gross findings will be captured as static image files (.tiff or .jpg) and made available to the DCC. Images will be not be annotated but linked by metadata to the mouse line.

## Parameters and Metadata

### Brain IMPC\_PAT\_001\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** brain

**Ontology Options:** abnormal brain morphology, flat, yellow, multiple, decreased brain size, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, increased brain size, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, hydrocephaly, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Eye with optic nerve IMPC\_PAT\_002\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** eye\_with\_optic\_nerve

**Ontology Options:** abnormal eye morphology, flat, yellow, abnormal optic nerve morphology, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, microphthalmia, anophthalmia, macrophthalmia, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, absent optic nerve, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, optic nerve hypoplasia, inflated, length, ovate, pink, orange, grey, enlarged optic nerve, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Spinal cord IMPC\_PAT\_003\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** spinal\_cord

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, abnormal spinal cord morphology, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Thymus IMPC\_PAT\_004\_002 | v2.0

ontologyParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: thymus

**Ontology Options:** flat, enlarged thymus, abnormal thymus morphology, athymia, small thymus, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Thyroid IMPC\_PAT\_005\_002 | v2.0

ontologyParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

Description: thyroid

**Ontology Options:** flat, yellow, multiple, small thyroid gland, abnormal thyroid gland morphology, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, absent thyroid gland, enlarged thyroid gland, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Heart IMPC\_PAT\_006\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** heart

**Ontology Options:** flat, abnormal heart morphology, abnormal heart position or orientation, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, enlarged heart atrium, small heart, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, enlarged heart, inflated, length, ovate, pink, orange, grey, volume, abnormal heart shape, raised, area, diameter, obsolete absolute number value, circular,

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## Trachea IMPC\_PAT\_007\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** trachea

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, abnormal trachea morphology, inflated, length, ovate, small trachea, short trachea, pink, orange, grey, volume, enlarged trachea, raised, area, diameter, obsolete absolute number value, circular, tracheoesophageal fistula,

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## Esophagus IMPC\_PAT\_008\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** esophagus

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, abnormal esophagus morphology, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, enlarged esophagus, pink, orange, grey, volume, small esophagus, raised, area, diameter, obsolete absolute number value, circular,

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## Lung IMPC\_PAT\_009\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** lung

**Ontology Options:** abnormal lung morphology, absent lungs, flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, small lung, enlarged lung, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Liver IMPC\_PAT\_010\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** liver

**Ontology Options:** abnormal liver morphology, flat, yellow, multiple, brown, absent liver, enlarged liver, soft, hard, irregular spatial pattern, small liver, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Gall bladder** IMPC\_PAT\_011\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** gall\_bladder

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, small gallbladder, abnormal gallbladder morphology, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, enlarged gallbladder, inflated, length, ovate, pink, orange, grey, absent gallbladder, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Stomach** IMPC\_PAT\_012\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** stomach

**Ontology Options:** flat, enlarged stomach, abnormal stomach morphology, yellow, multiple, absent stomach, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, small stomach, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Small intestine IMPC\_PAT\_013\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** small\_intestine

**Ontology Options:** flat, yellow, multiple, brown, enlarged duodenum, abnormal duodenum morphology, absent duodenum, soft, hard, irregular spatial pattern, right, left, abnormal ileum morphology, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, distended jejunum, abnormal jejunum morphology, firm, random pattern, multi-localised, friable, watery, fluid-filled, absent jejunum, absent ileum, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, intussusception, raised, enlarged ileum, area, diameter, obsolete absolute number value, circular,

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## Large intestine IMPC\_PAT\_014\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true



**Description:** large\_intestine

**Ontology Options:** flat, absent rectum, abnormal rectum morphology, abnormal cecum morphology, yellow, multiple, brown, absent colon, abnormal colon morphology, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, rectal prolapse, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, megacolon, length, ovate, pink, orange, grey, volume, microcolon, enlarged cecum, small cecum, raised, absent cecum, area, diameter, obsolete absolute number value, circular, rectoperineal fistula, rectovaginal fistula,

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## **Pancreas** IMPC\_PAT\_015\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** pancreas

**Ontology Options:** abnormal pancreas morphology, flat, small pancreas, yellow, multiple, enlarged pancreas, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, absent pancreas, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Spleen** IMPC\_PAT\_016\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** spleen

**Ontology Options:** flat, abnormal spleen morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, small spleen, enlarged spleen, length, ovate, pink, orange, grey, volume, absent spleen, raised, area, diameter, obsolete absolute number value, circular,

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## **Kidney** IMPC\_PAT\_017\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** kidney

**Ontology Options:** flat, yellow, multiple, brown, small kidney, abnormal kidney morphology, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, enlarged kidney, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, single kidney, length, ovate, pink, orange, grey, polycystic kidney, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Adrenal gland** IMPC\_PAT\_018\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** adrenal\_gland

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, absent adrenal gland, abnormal adrenal gland morphology, inflated, small adrenal glands, length, ovate, pink, orange, grey, volume, enlarged adrenal glands, raised, area, diameter, obsolete absolute number value, circular,

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## Mammary gland IMPC\_PAT\_019\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** mammary\_gland

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, abnormal mammary gland morphology, increased mammary gland number, inflated, length, ovate, pink, orange, grey, volume, absent mammary gland, raised, area, diameter, obsolete absolute number value, circular,

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## Lymph node IMPC\_PAT\_020\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** lymph\_node

**Ontology Options:** flat, enlarged lymph nodes, abnormal lymph node morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red,

green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, decreased lymph node number, increased lymph node number, small lymph nodes, bilateral, unilateral, symmetrical, inflated, absent lymph nodes, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Skin** IMPC\_PAT\_021\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** skin

**Ontology Options:** flat, abnormal skin morphology, thin skin, scaly skin, yellow, multiple, brown, soft, hard, wrinkled skin, irregular spatial pattern, thick skin, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Skeletal muscle** IMPC\_PAT\_022\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** skeletal\_muscle

**Ontology Options:** flat, increased skeletal muscle mass, abnormal skeletal muscle morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, decreased skeletal muscle mass, firm,

random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Urinary bladder IMPC\_PAT\_023\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** true

**Description:** urinary\_bladder

**Ontology Options:** flat, yellow, multiple, urinary bladder obstruction, abnormal urinary bladder morphology, enlarged urinary bladder, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, absent urinary bladder, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, cystolithiasis, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Testes IMPC\_PAT\_024\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** testes

**Ontology Options:** flat, absent testes, abnormal testis morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery,

fluid-filled, small testis, enlarged testis, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, cryptorchism, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Epididymis IMPC\_PAT\_025\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** epididymis

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, absent epididymis, abnormal epididymis morphology, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, enlarged epididymis, small epididymis, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Prostate IMPC\_PAT\_026\_002 | v2.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** prostate

**Ontology Options:** absent prostate gland, abnormal prostate gland morphology, flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, enlarged prostate gland, small prostate gland, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Seminal vesicle IMPC\_PAT\_027\_002 | v2.1

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Description:** seminal\_vesicles

**Ontology Options:** small seminal vesicle, abnormal seminal vesicle morphology, flat, yellow, multiple, brown, enlarged seminal vesicle, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, absent seminal vesicle, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Ovary IMPC\_PAT\_028\_002 | v2.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Description:** ovary

**Ontology Options:** abnormal ovary morphology, flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, small ovary, enlarged ovary, distributed, beige, localized, sunken, bilateral, absent ovary, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Uterus IMPC\_PAT\_029\_002 | v2.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: uterus

**Ontology Options:** flat, abnormal uterus morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, small uterus, distributed, beige, localized, sunken, absent uterus, bilateral, unilateral, symmetrical, hydrometra, inflated, enlarged uterus, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular, blind uterus,

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## Body Weight IMPC\_PAT\_049\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Unit Measured: g

Description: body\_weight

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## Images IMPC\_PAT\_057\_002 | v2.0

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false



**Description:** images

**Increments:** Minimum 1

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## Comments (in English) IMPC\_PAT\_032\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** General comments, in English

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## Experimenter ID IMPC\_PAT\_052\_002 | v2.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** experimenter

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## Method of sacrifice IMPC\_PAT\_054\_002 | v2.0

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), None, Cervical dislocation, Isoflurane overdose and exsanguination, Pentobarb (0.05ml), Pentobarb (0.15ml), Pentobarb (0.2ml), Medetomidine/Midazolam/Butorphanol,

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## Method of Blood Collection IMPC\_PAT\_055\_002 | v2.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** blood\_collection

**Options:** Cardiac puncture, 1ml EDTA tubes, Braun-Melsungen, GER, Retro-orbital puncture, Not bled,

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## Equipment ID IMPC\_PAT\_056\_002 | v2.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** equipment\_name

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## Fixative IMPC\_PAT\_058\_002 | v2.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Description: fixative

Options: 10% buffered formalin phosphate, 4% NBF-24hrs, Neutral buffered formalin, 4% PFA/PBS, 10% neutral buffer formalin, RT, O/N, Formol, Bouin, 10% buffered formalin,

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## Date equipment last calibrated IMPC\_PAT\_059\_002 | v2.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

## Equipment manufacturer IMPC\_PAT\_060\_002 | v2.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Ohaus, Leica, Keyence Co., Ltd, Olympus, Nikon, Mettler Toledo, Canon,

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## Equipment model IMPC\_PAT\_061\_002 | v2.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Options:** AV2101, ASP200S, VHX-100, AV213C, SC100, Z6 ApoE, M651, 1 x AW 110, 1 x 4500, SZ61, C-5060, MS104S, AV313, M165C, Coolpix P520, EOS 1200D, MZ APO, VHX-6000, Z 50,

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## **Date of sacrifice** IMPC\_PAT\_030\_002 | v2.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## **ID for sample banking protocol** IMPC\_PAT\_031\_002 | v2.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** ID for center-specific cassette processing protocol

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## **Balance manufacturer** IMPC\_PAT\_033\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Options:** A&D, Sartorius, Ohaus, Denver Instrument,

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## Balance model IMPC\_PAT\_034\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Options: HR-100A, Secura, Adventurer AX223/E, AV313, AV213C, P-214,

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## Camera resolution IMPC\_PAT\_035\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

## Eye fixative IMPC\_PAT\_036\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

## Salivary gland IMPC\_PAT\_062\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** flat, enlarged salivary gland, abnormal salivary gland morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable,

watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, small salivary gland, absent salivary gland, raised, area, diameter, obsolete absolute number value, circular,

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## Sternum IMPC\_PAT\_063\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, split sternum, abnormal sternum morphology, short sternum, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, absent sternum, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular, wide sternum,

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## Femur IMPC\_PAT\_064\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, abnormal femur morphology, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, long femur, absent femur, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, short femur, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Bone marrow IMPC\_PAT\_065\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, abnormal bone marrow morphology, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Brown fat IMPC\_PAT\_066\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, abnormal brown adipose tissue morphology, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, increased brown adipose tissue amount, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular, decreased brown adipose tissue amount,

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## Tibia IMPC\_PAT\_067\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, long tibia, abnormal tibia morphology, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, absent tibia, short tibia, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Knee joint** IMPC\_PAT\_068\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, abnormal joint morphology, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, fused joints, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Trigeminal V nerve** IMPC\_PAT\_069\_001 | v1.1

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, absent trigeminal nerve,



abnormal trigeminal nerve morphology, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Nasal cavity IMPC\_PAT\_070\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, abnormal nasal cavity morphology, bilateral, unilateral, symmetrical, inflated, absent nasal cavity, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

---

## Ear IMPC\_PAT\_071\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, abnormal ear morphology, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, big ears, distributed, beige, localized, sunken, small ears, bilateral, unilateral, symmetrical, inflated, length, absent ear lobes, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## Tooth IMPC\_PAT\_072\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, abnormal tooth morphology, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, absent teeth, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular, abnormal tooth color,

---

## Tongue IMPC\_PAT\_073\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** absent tongue, abnormal tongue morphology, increased tongue size, flat, decreased tongue size, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

---

## Sciatic nerve IMPC\_PAT\_074\_001 | v1.0

ontologyParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

**Ontology Options:** flat, yellow, multiple, brown, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, abnormal sciatic nerve morphology, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Bone** IMPC\_PAT\_075\_001 | v1.0

ontologyParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Ontology Options:** flat, yellow, multiple, brown, abnormal bone structure, soft, hard, irregular spatial pattern, right, left, blue, black, blotchy, white, red, green, no abnormal phenotype detected, linear, firm, random pattern, multi-localised, friable, watery, fluid-filled, distributed, beige, localized, sunken, bilateral, unilateral, symmetrical, inflated, length, ovate, pink, orange, grey, volume, raised, area, diameter, obsolete absolute number value, circular,

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## **Tissue available for distribution** IMPC\_PAT\_076\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** Are there tissue blocks available for distribution?

**Options:** Yes, No,

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