Gross Pathology and Tissue Collection NIN GLA_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 59

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. Inidividual 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

Liver NINGLA_PAT_010_002 | v2.0

ontologyParameter

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

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,

Spinal cord NINGLA_PAT_003_002 | v2.0

ontologyParameter

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

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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Kidney NINGLA_PAT_017_002 | v2.0

ontologyParameter

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

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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Uterus NINGLA_PAT_029_002 | v2.0

ontologyParameter

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

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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Images NINGLA_PAT_057_002 | v2.0

seriesMediaParameter

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

Increments: Minimum 1

Stomach NINGLA_PAT_012_002 | v2.0

ontologyParameter

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

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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Tooth NINGLA_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,

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ID for sample banking protocol NINGLA_PAT_031_002 | v2.0

procedureMetadata

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

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Spleen NINGLA_PAT_016_002 | v2.0

ontologyParameter

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

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,

Prostate NINGLA_PAT_026_002 | v2.0

ontologyParameter

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

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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Equipment ID NINGLA_PAT_056_002 | v2.0

procedureMetadata

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

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Testes NINGLA_PAT_024_002 | v2.0

ontologyParameter

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

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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Thyroid NINGLA_PAT_005_002 | v2.0

ontologyParameter

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

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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Urinary bladder NINGLA_PAT_023_002 | v2.0

ontologyParameter

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

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,

Mammary gland NINGLA_PAT_019_002 | v2.0

ontologyParameter

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

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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Trigeminal V nerve NINGLA_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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Femur NINGLA_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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Date of sacrifice NINGLA_PAT_030_002 | v2.0

procedureMetadata

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

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Pancreas NINGLA_PAT_015_002 | v2.0

ontologyParameter

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

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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Skeletal muscle NINGLA_PAT_022_002 | v2.0

ontologyParameter

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

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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Bone NINGLA_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,

Gall bladder NINGLA_PAT_011_002 | v2.0

ontologyParameter

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

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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Balance manufacturer NINGLA_PAT_033_001 | v1.0

procedureMetadata

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

Options: Sartorius, A&D, Ohaus,

Equipment model NINGLA_PAT_061_002 | v2.0

procedureMetadata

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

Options: 1 x AW 110, C-5060, AV313, VHX-100, ASP200S, M651, Z6 ApoE, MS104S, SZ61, AV2101, 1 x 4500, Coolpix P520, AV213C, M165C, SC100,

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Nasal cavity NINGLA_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,

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Equipment manufacturer NINGLA_PAT_060_002 | v2.0

procedureMetadata

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

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

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Bone marrow NINGLA_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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Tongue NINGLA_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,

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Method of Blood Collection NINGLA_PAT_055_002 | v2.0

procedureMetadata

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

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

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Lung NINGLA_PAT_009_002 | v2.0

ontologyParameter

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

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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Date equipment last calibrated NINGLA_PAT_059_002 | v2.0

procedureMetadata

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

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Skin NINGLA_PAT_021_002 | v2.0

ontologyParameter

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

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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Eye with optic nerve NINGLA_PAT_002_002 | v2.0

ontologyParameter

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

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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Epididymis NINGLA_PAT_025_002 | v2.0

ontologyParameter

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

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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Brown fat NINGLA_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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Heart NINGLA_PAT_006_002 | v2.0

ontologyParameter

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

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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Sternum NINGLA_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,

Body Weight NINGLA_PAT_049_002 | v2.0

simpleParameter

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

Unit Measured: g

Comments (in English) NINGLA_PAT_032_002 | v2.0

simpleParameter

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

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Tissue available for distribution NINGLA_PAT_076_001 | v1.0

simpleParameter

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

Options: No, Yes,

Experimenter ID NINGLA_PAT_052_002 | v2.0

procedureMetadata

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

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Camera resolution NINGLA_PAT_035_001 | v1.0

procedureMetadata

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

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Sciatic nerve NINGLA_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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Adrenal gland NINGLA_PAT_018_002 | v2.0

ontologyParameter

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

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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Lymph node NINGLA_PAT_020_002 | v2.0

ontologyParameter

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

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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Large intestine NINGLA_PAT_014_002 | v2.0

ontologyParameter

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

Ontology Options: flat, absent rectum, abnormal rectum morphology, abnormal large intestine 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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Knee joint NINGLA_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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Balance model NINGLA_PAT_034_001 | v1.0

procedureMetadata

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

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

Brain NINGLA_PAT_001_002 | v2.0

ontologyParameter

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

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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Ear NINGLA_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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Eye fixative NINGLA_PAT_036_001 | v1.0

procedureMetadata

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

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Trachea NINGLA_PAT_007_002 | v2.0

ontologyParameter

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

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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Method of sacrifice NINGLA_PAT_054_002 | v2.0

procedureMetadata

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

Options: Pentobarb (0.05ml), Pentobarb (0.15ml), Pentobarb (0.2ml), Carbon dioxide, Pentobarb (0.1ml), Isoflurane overdose, Ketamine (110mg/kg)/Xylazine (11mg/kg), Cervical dislocation, None, Isoflurane overdose and exsanguination, Ketamine (100mg/kg)/Xylazine (10mg/kg), Avertin, Ketamine (110mg/kg)/Xylazine (11mg/kg)/ Antisedan (1mg/kg), Exsanguination, Ketamine(100mg/kg)/ Xylazine (10mg/kg)/ Antisedan (1mg/kg),

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Fixative NINGLA_PAT_058_002 | v2.0

procedureMetadata

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

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

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Small intestine NINGLA_PAT_013_002 | v2.0

ontologyParameter

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

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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Ovary NINGLA_PAT_028_002 | v2.0

ontologyParameter

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

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,

Thymus NINGLA_PAT_004_002 | v2.0

ontologyParameter

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

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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Tibia NINGLA_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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Seminal vesicle NINGLA_PAT_027_002 | v2.1

ontologyParameter

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

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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Salivary gland NINGLA_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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Esophagus NINGLA_PAT_008_002 | v2.0

ontologyParameter

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

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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