\*Title: Gross Pathology & Tissue Collection

\*Centre: IMPC

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\*Procedure Id:

## \*1. 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).

## \*2. Experimental Design

Minimum number of mutant animals: 2 mutant males + 2 mutant females

Minimum age of animals: 16 weeks

## \* 3. 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

## \*4. Procedure

1. Euthanize 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 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:

• MA ontology terms for location/topography

• MP ontology terms for presence/absence/large/small/abnormal

• PATO ontology terms for descriptors (size, shape, colour, consistency, distribution of lesions)

## \*5. 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.

## \*6 . Measured Parameters - list

The following 29 tissues must be collected – these are set as parameters:

|  |  |
| --- | --- |
| Brain | Spleen |
| Eye with optic nerve | Kidney |
| Spinal cord | Adrenal gland |
| Thymus | Mammary gland |
| Thyroid | Lymph node |
| Heart | Skin |
| Trachea | Skeletal muscle |
| Esophagus | Urinary bladder |
| Lung | Testes |
| Liver | Epididymis |
| Gall bladder | Prostate |
| Stomach | Seminal vesicles |
| Small intestine | Ovary |
| Large intestine | Uterus |
| Pancreas |  |

Also set as a parameter,

Additional tissues

## \*7. MetaData Parameters - list

|  |  |  |  |
| --- | --- | --- | --- |
| **Metadata** | **Levels required** | **Required for data upload** | **Required for data analysis** |
| Animal number | At least 4 mutant mice | YES | YES |
| Age | At least 16 weeks | YES | YES |
| Experimenter ID |  | YES | NO |
| Date of experiment | DD/MM/YYYY | YES | NO |
| Euthanasia | Method | YES | NO |
| Blood Collection | Method | NO | NO |
| Weight | Body | YES | YES |
| Equipment ID |  | YES | NO |
| Gross Findings | Present/Absent | YES | YES |
| Images | Mouse ID | YES | YES |
| Fixation | Fixative | YES | NO |