MicroCT E18.5 IMPC_EMA_002

Purpose

To assess morphological defects in E18.5 embryos from lethal or subviable strains with MicroCT.

Experimental Design

- Set up timed matings with heterozygous mice
- Day 0 is defined as the midpoint of the prior dark cycle following the identification of a copulation plug.
- Collect embryos at E18.5 with 3 minimum homozygous and 1 littermate control
- Ensure embryos are bleed as much as possible.
- Reconstruct the scans according to manufacturer's instructions.

Procedure

1. Set up timed mating with heterozygous animals. Dissect and collect >=3 homozygote embryos.
2. Process the embryos using the centre's staining and embedding protocol. Centre-specific methods are recorded within a document
3. Scan and generate reconstructions of embryos.

Notes

Embryos may be processed for Histopathology.

Parameters and Metadata

Embryo reconstruction IMPC_EMA_001_001 | v1.1

seriesMediaParameter


Increments: Minimum 1
Image Pixel Size IMPC_EMA_007_001 | v1.0

Unit Measured: μm

E18.5 MicroCT Preparation protocol IMPC_EMA_008_001 | v1.0

Date equipment last calibrated IMPC_EMA_009_001 | v1.0

Date of Sacrifice IMPC_EMA_010_001 | v1.0
**Date Preparation Finished** IMPC_EMA_011_001 | v1.0

**Date of Scan** IMPC_EMA_012_001 | v1.0

**Source Voltage** IMPC_EMA_013_001 | v1.0

**Source Current** IMPC_EMA_014_001 | v1.1
procedureMetadata


Unit Measured: uA

Object to Source IMPC_EMA_015_001 | v1.0

procedureMetadata


Unit Measured: mm

Camera to Source IMPC_EMA_016_001 | v1.1

procedureMetadata


Unit Measured: mm

Screenshots IMPC_EMA_017_001 | v1.1

seriesMediaParameter

**Increments:** Minimum 1

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**Limb digits** IMPC_EMA_018_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Tail** IMPC_EMA_019_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Limbs** IMPC_EMA_020_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,
Pinna IMPC_EMA_021_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Vibrissa IMPC_EMA_022_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Edema IMPC_EMA_023_001 | v1.0

simpleParameter


Options: yes, no, unobservable,

Embryo size IMPC_EMA_024_001 | v1.0

simpleParameter
**Spinal Cord**  IMPC_EMA_025_001  | v1.0

**Spine curvature**  IMPC_EMA_026_001  | v1.0

**Craniofacial morphology**  IMPC_EMA_027_001  | v1.0
Hindbrain subarachnoid space  IMPC_EMA_028_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Midbrain roof plate  IMPC_EMA_029_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Midbrain  IMPC_EMA_030_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Cerebellum** IMPC_EMA_031_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Cerebral cortex** IMPC_EMA_032_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Thalamus** IMPC_EMA_033_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Corpus striatum** IMPC_EMA_034_001 | v1.0

*simpleParameter*

**Req. Analysis:** false  
**Req. Upload:** false  
**Is Annotated:** true
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Hippocampus IMPC_EMA_035_001 | v1.0
simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Hypothalamus IMPC_EMA_036_001 | v1.0
simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Pineal gland IMPC_EMA_037_001 | v1.0
simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Pons**  IMPC_EMA_038_001 | v1.0  
simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Medulla oblongata**  IMPC_EMA_039_001 | v1.0  
simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Lateral ventricles**  IMPC_EMA_040_001 | v1.0  
simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Lateral ventricle choroid plexus**  IMPC_EMA_041_001 | v1.0  
simpleParameter
**4th ventricle choroid plexus** IMPC_EMA_042_001 | v1.0

**simpleParameter**

**4th Ventricle** IMPC_EMA_043_001 | v1.0

**simpleParameter**

**Cerebral aqueduct** IMPC_EMA_044_001 | v1.0

**simpleParameter**
**Median sulcus**  IMPC_EMA_045_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**3rd ventricle**  IMPC_EMA_046_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Olfactory lobe**  IMPC_EMA_047_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Trigeminal ganglion** IMPC_EMA_048_001 | v1.0

simpleParameter

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

*Options:* present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Pituitary gland** IMPC_EMA_049_001 | v1.0

simpleParameter

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

*Options:* present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Spinal cord cervical region** IMPC_EMA_050_001 | v1.0

simpleParameter

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

*Options:* present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Dorsal root ganglion** IMPC_EMA_051_001 | v1.0

simpleParameter

*Req. Analysis:* false  
*Req. Upload:* true  
*Is Annotated:* true
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Cochlea IMPC_EMA_052_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Nasal septum IMPC_EMA_053_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Nasal cavity IMPC_EMA_054_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Nasopharynx** IMPC_EMA_055_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Vomeronasal organ** IMPC_EMA_056_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Oropharynx** IMPC_EMA_057_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Oral cavity** IMPC_EMA_058_001 | v1.0

simpleParameter
Optic nerve  IMPC_EMA_059_001 | v1.0
simpleParameter

Intraretinal space  IMPC_EMA_060_001 | v1.0
simpleParameter

Hyaloid cavity  IMPC_EMA_061_001 | v1.0
simpleParameter
**Cornea**  IMPC_EMA_062_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Lens**  IMPC_EMA_063_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Eyelids**  IMPC_EMA_064_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Temporal bone** IMPC_EMA_065_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Pharyngo-tympanic tube** IMPC_EMA_066_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Palate** IMPC_EMA_067_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Epiglottis** IMPC_EMA_068_001 | v1.0

*simpleParameter*

- **Req. Analysis:** false
- **Req. Upload:** true
- **Is Annotated:** true
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Tongue**  
IMPC_EMA_069_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Mandible**  
IMPC_EMA_070_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Lower jaw molar**  
IMPC_EMA_071_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Upper jaw molar** IMPC_EMA_072_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Sphenoid bone** IMPC_EMA_073_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Thyroid gland** IMPC_EMA_074_001 | v1.0

*simpleParameter*

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Submandibular gland** IMPC_EMA_075_001 | v1.0

*simpleParameter*
Brown fat IMPC_EMA_076_001 | v1.0
simpleParameter

Vertebræ IMPC_EMA_077_001 | v1.0
simpleParameter

Esophagus IMPC_EMA_078_001 | v1.0
simpleParameter
Clavicle  IMPC_EMA_079_001  |  v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Scapula  IMPC_EMA_080_001  |  v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Ulna  IMPC_EMA_081_001  |  v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Humerus** IMPC_EMA_082_001 | v1.0

*simpleParameter*

**Options**: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Arytenoid cartilage** IMPC_EMA_083_001 | v1.0

*simpleParameter*

**Options**: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Cricoid cartilage** IMPC_EMA_084_001 | v1.0

*simpleParameter*

**Options**: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Trachea** IMPC_EMA_085_001 | v1.0

*simpleParameter*

**Options**: present, absent, abnormal, unobservable, ambiguous, imageOnly,
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Carotid artery IMPC_EMA_086_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Thymus IMPC_EMA_087_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Sternum IMPC_EMA_088_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
Rib IMPC_EMA_089_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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T1 rib IMPC_EMA_090_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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Vena cava IMPC_EMA_091_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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Inferior vena cava IMPC_EMA_092_001 | v1.0

simpleParameter
Superior vena cava IMPC_EMA_093_001 | v1.0

Jugular vein IMPC_EMA_094_001 | v1.0

Ductus arteriosus IMPC_EMA_095_001 | v1.0
**Pulmonary valve** IMPC_EMA_096_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Pulmonary trunk** IMPC_EMA_097_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Dorsal aorta** IMPC_EMA_098_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Ductus venosus** IMPC_EMA_099_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Aorta** IMPC_EMA_100_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Aortic valve** IMPC_EMA_101_001 | v1.0

simpleParameter

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

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Heart atrium** IMPC_EMA_102_001 | v1.0

simpleParameter

Req. Analysis: false  
Req. Upload: true  
Is Annotated: true
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Interventricular septum** IMPC_EMA_106_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Pericardial cavity** IMPC_EMA_107_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Pericardium** IMPC_EMA_108_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Main bronchus** IMPC_EMA_109_001 | v1.0

simpleParameter
**Bronchus**  IMPC_EMA_110_001 | v1.0

simpleParameter

**Right lung cranial lobe**  IMPC_EMA_111_001 | v1.0

simpleParameter

**Right lung middle lobe**  IMPC_EMA_112_001 | v1.0

simpleParameter
**Right lung caudal lobe** IMPC_EMA_113_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Right lung accessory lobe** IMPC_EMA_114_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Left lung** IMPC_EMA_115_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Diaphragm**  IMPC_EMA_116_001 | v1.0

**simpleParameter**

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Peritoneal cavity**  IMPC_EMA_117_001 | v1.0

**simpleParameter**

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Liver**  IMPC_EMA_118_001 | v1.0

**simpleParameter**

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Liver left lobe**  IMPC_EMA_119_001 | v1.0

**simpleParameter**

**Req. Analysis:** false  **Req. Upload:** true  **Is Annotated:** true
Liver right lobe  IMPC_EMA_120_001 | v1.0

Request Analysis: false  Request Upload: true  Is Annotated: true

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Liver caudate lobe  IMPC_EMA_121_001 | v1.0

Request Analysis: false  Request Upload: true  Is Annotated: true

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

Gallbladder  IMPC_EMA_122_001 | v1.0

Request Analysis: false  Request Upload: false  Is Annotated: true

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
Liver lobar interzone  IMPC_EMA_123_001  | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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Pancreas  IMPC_EMA_124_001  | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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Stomach  IMPC_EMA_125_001  | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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Pyloric antrum  IMPC_EMA_126_001  | v1.0

simpleParameter
Stomach fundus IMPC_EMA_127_001 | v1.0

simpleParameter

Stomach lumen IMPC_EMA_128_001 | v1.0

simpleParameter

Small intestine IMPC_EMA_129_001 | v1.0

simpleParameter
**Hindgut** IMPC_EMA_130_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Midgut** IMPC_EMA_131_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Hip joint** IMPC_EMA_132_001 | v1.0

simpleParameter


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Femur**  IMPC_EMA_133_001 | v1.0  
simpleParameter

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Fibula**  IMPC_EMA_134_001 | v1.0  
simpleParameter

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Tibia**  IMPC_EMA_135_001 | v1.0  
simpleParameter

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

**Adrenal gland**  IMPC_EMA_136_001 | v1.0  
simpleParameter

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Kidney**  IMPC_EMA_137_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Renal calyx**  IMPC_EMA_138_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Bladder**  IMPC_EMA_139_001 | v1.0

*simpleParameter*


Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
**Rectum** IMPC_EMA_140_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Spleen** IMPC_EMA_141_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Ovary** IMPC_EMA_142_001 | v1.0

simpleParameter

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

**Options:** present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Testes** IMPC_EMA_143_001 | v1.0

simpleParameter
Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Penis** IMPC_EMA_144_001 | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Circumventricular organ** IMPC_EMA_145_001 | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,

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**Hyoid** IMPC_EMA_146_001 | v1.0

simpleParameter

Options: present, absent, abnormal, unobservable, ambiguous, imageOnly,
Severely dysmorphic IMPC_EMA_147_001 | v1.0

simpleParameter


Options: yes, no, unobservable,

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Delayed embryonic development IMPC_EMA_148_001 | v1.0

simpleParameter


Options: yes, no, unobservable,

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Annotator ID IMPC_EMA_149_001 | v1.0

procedureMetadata


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Date of Annotation IMPC_EMA_150_001 | v1.0

procedureMetadata