Gross Morphology Embryo E18.5 IMPC_GEP_002

Purpose

To assess visible morphological defects in E18.5 embryos from lethal strains

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.
- Minimum number of animals: 1 mutant of any sex
- Age at test: E18.5 and Older
- Capture gross images (optional)
- Collect tissue and genotype embryos.

Procedure

1. Set up timed mating with heterozygous animals. Dissect at a consistent time and collect >=2 homozygote embryos. Coordination with viability screen is at the centres discretion.
2. Score embryos as live or dead if possible.
3. Assess embryos according to Gross Morphology parameters.
4. Generate gross images of embryos (optional) with scored defects and control embryos.
5. Collect tissue for genotyping
6. Process embryos for Histopathology, or other imaging (OPTIONAL - depending on center pipeline)
7. Scores will be shown per embryo and split by zygosity.

If capturing images please attempt to capture left, right, front, and back views of the embryo but if this is not possible left, right is sufficient. Feel free to take higher magnification views to show morphologies of interest.

Notes

All genotypes should be collected using validated assays.
Y chromosome assay required for X-linked lethal strains.

Embryos may be processed for Histopathology or 3D Imaging

**Parameters and Metadata**

**Alive**  IMPC_GEP_001_001 | v1.0

*simpleParameter*


Description: alive

Options: yes, no,

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**Scored**  IMPC_GEP_002_001 | v1.0

*simpleParameter*


Description: scored

Options: yes, no,

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**Behavior/neurological**  IMPC_GEP_003_001 | v1.0

*simpleParameter*

Description: behavior_neurological
Options: normal, abnormal, unobservable,

Cardiovascular System IMPC_GEP_006_001 | v1.0


Description: cardiovascular_system
Options: normal, abnormal, unobservable,

Cardiovascular Development IMPC_GEP_007_001 | v1.0


Description: cardiovascular_development
Options: normal, abnormal, unobservable,

Heart Development IMPC_GEP_008_001 | v1.0


Description: heart_development
Options: normal, abnormal, unobservable,
**Outflow tract development** IMPC_GEP_009_001 | v1.0

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Description: outflow_tract_development
Options: normal, abnormal, unobservable,
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**Heart Morphology** IMPC_GEP_010_001 | v1.0

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Description: heart_morphology
Options: normal, abnormal, unobservable,
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**Blood Vessel Morphology** IMPC_GEP_013_001 | v1.0

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Description: blood_vessel_morphology
Options: normal, abnormal, unobservable,
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Blood vessel morphology

Options: normal, abnormal, unobservable

Craniofacial IMPC_GEP_014_001 | v1.0

description: craniofacial

Options: normal, abnormal, unobservable

Head shape IMPC_GEP_015_001 | v1.0

description: head_shape

Options: normal, abnormal, unobservable

Head size IMPC_GEP_016_001 | v1.0

description: Head size

Options: normal, abnormal, unobservable
Description: head_size

Options: normal, abnormal, unobservable,

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**Facial Morphology** IMPC_GEP_017_001 | v1.0

*simpleParameter*

Description: facial_morphology

Options: normal, abnormal, unobservable,

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**Digestive/alimentary** IMPC_GEP_020_001 | v1.0

*simpleParameter*

Description: digestive_alimentary

Options: normal, abnormal, unobservable,

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**Digestive System Morphology** IMPC_GEP_021_001 | v1.0
simpleParameter


Description: digestive_system_morphology

Options: normal, abnormal, unobservable,

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Embryo Size IMPC_GEP_022_001 | v1.0

simpleParameter


Description: embryo_size

Options: normal, abnormal, unobservable,

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Embryo weight IMPC_GEP_023_001 | v1.0

simpleParameter


Description: embryo_weight

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Body wall morphology IMPC_GEP_024_001 | v1.0

simpleParameter
Body Wall Morphology

Description: body_wall_morphology
Options: normal, abnormal, unobservable,

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Hearing/Vestibular/Ear IMPC_GEP_025_001 | v1.0

Description: hearing_vestibular_ear
Options: normal, abnormal, unobservable,

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Outer ear morphology IMPC_GEP_026_001 | v1.0

Description: outer_ear_morphology
Options: normal, abnormal, unobservable,

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Ear Development IMPC_GEP_027_001 | v1.0

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Description: ear_development

Options: normal, abnormal, unobservable,

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**Homeostasis/metabolism** IMPC_GEP_028_001 | v1.0

simpleParameter

Description: homeostasis_metabolism

Options: normal, abnormal, unobservable,

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**Integument** IMPC_GEP_032_001 | v1.0

simpleParameter

Description: integument

Options: normal, abnormal, unobservable,

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**Vibrissa Morphology** IMPC_GEP_033_001 | v1.0
simpleParameter


Description: vibrissa_morphology
Options: normal, abnormal, unobservable,

Skin Appearance IMPC_GEP_034_001 | v1.0


Description: skin_appearance
Options: normal, abnormal, unobservable,

Skin Coloration IMPC_GEP_036_001 | v1.0


Description: skin_coloration
Options: normal, abnormal, unobservable,
**Limb Morphology**  IMPC_GEP_037_001 | v1.0

simpleParameter


Description: limb_morphology

Options: normal, abnormal, unobservable,

**Tail Morphology**  IMPC_GEP_038_001 | v1.0

simpleParameter


Description: tail_morphology

Options: normal, abnormal, unobservable,

**Liver/Biliary**  IMPC_GEP_040_001 | v1.0

simpleParameter


Description: liver_biliary

Options: normal, abnormal, unobservable,
Liver Morphology IMPC_GEP_041_001 | v1.0

simpleParameter


Description: liver_morphology

Options: normal, abnormal, unobservable,

Liver Size IMPC_GEP_042_001 | v1.0

simpleParameter


Description: liver_size

Options: normal, abnormal, unobservable,

Muscle IMPC_GEP_043_001 | v1.0

simpleParameter


Description: muscle

Options: normal, abnormal, unobservable,
**Diaphragm Morphology** IMPC_GEP_044_001 | v1.0

*simpleParameter*

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

**Description:** diaphragm_morphology

**Options:** normal, abnormal, unobservable,

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**Nervous System** IMPC_GEP_045_001 | v1.0

*simpleParameter*

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

**Description:** nervous_system

**Options:** normal, abnormal, unobservable,

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**Brain Development** IMPC_GEP_046_001 | v1.0

*simpleParameter*

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

**Description:** brain_development

**Options:** normal, abnormal, unobservable,
Renal/Urinary IMPC_GEP_050_001 | v1.0

**simpleParameter**

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

**Description:** renal_urinary

**Options:** normal, abnormal, unobservable,

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Kidney IMPC_GEP_051_001 | v1.0

**simpleParameter**

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

**Description:** kidney

**Options:** normal, abnormal, unobservable,

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Respiratory System IMPC_GEP_052_001 | v1.0

**simpleParameter**

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

**Description:** respiratory_system

**Options:** normal, abnormal, unobservable,
Lung Morphology  IMPC_GEP_053_001 | v1.0

**Description:** lung_morphology

**Options:** normal, abnormal, unobservable,

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Lung Development  IMPC_GEP_054_001 | v1.0

**Description:** lung_development

**Options:** normal, abnormal, unobservable,

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Vision/Eye  IMPC_GEP_056_001 | v1.0

**Description:** vision_eye

**Options:** normal, abnormal, unobservable,
**Eye Morphology** IMPC_GEP_057_001 | v1.0

*simpleParameter*

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

**Description:** eye_morphology

**Options:** normal, abnormal, unobservable,

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**Eye Size** IMPC_GEP_058_001 | v1.0

*simpleParameter*

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

**Description:** eye_size

**Options:** normal, abnormal, unobservable,

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**Number of cervical vertebrae** IMPC_GEP_062_001 | v1.0

*simpleParameter*

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

**Description:** number_of_cervical_vertebrae

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**Comment on image** IMPC_GEP_063_001 | v1.0

simpleParameter


Description: comment_on_image

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**Images** IMPC_GEP_064_001 | v1.0

seriesMediaParameter


Description: images

Increments: Minimum 1

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**Experimenter ID** IMPC_GEP_065_001 | v1.0

procedureMetadata


Description: experimenter_id

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**Equipment ID** IMPC_GEP_066_001 | v1.0

procedureMetadata
Equipment Manufacturer  IMPC_GEP_067_001 | v1.0

Equipment Model  IMPC_GEP_068_001 | v1.0

Fixative  IMPC_GEP_069_001 | v1.0
**Description**: fixative

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**Time of Dissection** IMPC_GEP_070_001 | v1.0

procedureMetadata

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

**Description**: time_of_dissection

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**Somite Stage** IMPC_GEP_071_001 | v1.1

procedureMetadata

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

**Description**: somite_stage

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**Time of dark cycle start** IMPC_GEP_072_001 | v1.0

procedureMetadata

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

**Description**: time_of_dark_cycle_start
**Time of dark cycle end**  IMPC_GEP_073_001 | v1.0

`procedureMetadata`

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

**Description:** time_of_dark_cycle_end

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**Date equipment last calibrated**  IMPC_GEP_074_001 | v1.1

`procedureMetadata`

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

**Description:** date_equipment_last_calibrated

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**Spontaneous movement**  IMPC_GEP_004_002 | v2.2

`simpleParameter`

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

**Description:** no_spontaneous_movement

**Options:** yes, unobservable, no,

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**Responsive to tactile stimuli**  IMPC_GEP_005_002 | v2.2

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simpleParameter

Description: unresponsive_to_tactile_stimuli
Options: yes, unobservable, no,

Hemorrhage IMPC_GEP_011_002 | v2.0

Description: hemorrhage
Options: yes, unobservable, no,

Skin Hemorrhage IMPC_GEP_012_002 | v2.0

Description: skin_hemorrhage
Options: yes, unobservable, no,
**Facial Cleft**  IMPC_GEP_018_002 | v2.0

*simpleParameter*

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

**Description:** facial_cleft

**Options:** yes, unobservable, no,

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**Cleft Palate**  IMPC_GEP_019_002 | v2.0

*simpleParameter*

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

**Description:** cleft_palate

**Options:** yes, unobservable, no,

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**Cyanosis**  IMPC_GEP_029_002 | v2.0

*simpleParameter*

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

**Description:** cyanosis

**Options:** yes, unobservable, no,
**Edema**  IMPC_GEP_030_002 | v2.0

*simpleParameter*

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

**Description:** edema

**Options:** yes, unobservable, no,

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**Hydrops fetalis (fetal adema)**  IMPC_GEP_031_002 | v2.0

*simpleParameter*

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

**Description:** hydrops_fetalis_fetal_adema

**Options:** yes, unobservable, no,

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**Pallor**  IMPC_GEP_035_002 | v2.0

*simpleParameter*

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

**Description:** pallor

**Options:** yes, unobservable, no,
**Polydactyly** IMPC_GEP_039_002 | v2.0

*simpleParameter*


Description: polydactyly

Options: yes, unobservable, no,

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**Exencephaly** IMPC_GEP_047_002 | v2.0

*simpleParameter*


Description: exencephaly

Options: yes, unobservable, no,

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**Holoprosencephaly** IMPC_GEP_048_002 | v2.0

*simpleParameter*


Description: holoprosencephaly

Options: yes, unobservable, no,
**spina bifida** IMPC_GEP_049_002 | v2.0

simpleParameter

**Description:** spina_bifida

**Options:** yes, unobservable, no,

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**Respiratory Failure** IMPC_GEP_055_002 | v2.0

simpleParameter

**Description:** respiratory_failure

**Options:** yes, unobservable, no,

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**Microphthalmia** IMPC_GEP_059_002 | v2.0

simpleParameter

**Description:** microphthalmia

**Options:** yes, unobservable, no,
Anophthalmia IMPC_GEP_060_002 | v2.0

**simpleParameter**


**Description:** anophthalmia

**Options:** yes, unobservable, no,

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Failure of Eyelid Fusion IMPC_GEP_061_002 | v2.0

**simpleParameter**


**Description:** failure_of_eyelid_fusion

**Options:** yes, unobservable, no,

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Severely Dysmorphic IMPC_GEP_075_001 | v1.2

**simpleParameter**


**Options:** no, yes, unobservable,