Gross Morphology Embryo E14.5-E15.5 IM
PC_GEO_003

Purpose
To assess visible morphological defects in E14.5-E15.5 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**: E14.5-E15.5
- 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

**Heart Morphology**  IMPC_GEO_008_001 | v1.0

*simpleParameter*

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

*Description:* heart_morphology

*Options:* normal, abnormal, unobservable,

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**Blood Vessel Morphology**  IMPC_GEO_011_001 | v1.0

*simpleParameter*

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

*Description:* blood_vessel_morphology

*Options:* normal, abnormal, unobservable,

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**Head shape**  IMPC_GEO_015_001 | v1.0

*simpleParameter*

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

*Description:* head_shape

*Options:* normal, abnormal, unobservable,
**Head size** IMPC_GEO_016_001 | v1.0

*simpleParameter*

**Description:** head_size

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

**Embryo Size** IMPC_GEO_019_001 | v1.0

*simpleParameter*

**Description:** embryo_size

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

**Ear Morphology** IMPC_GEO_022_001 | v1.1

*simpleParameter*

**Description:** abnormal_ear_morphology

**Options:** normal, abnormal, unobservable,
**Vibrissa Morphology** IMPC_GEO_028_001 | v1.0

**simpleParameter**

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

**Description:** vibrissa_morphology

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

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**Skin Appearance** IMPC_GEO_029_001 | v1.0

**simpleParameter**

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

**Description:** skin_appearance

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

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**Skin Coloration** IMPC_GEO_030_001 | v1.0

**simpleParameter**

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

**Description:** skin_coloration

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

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**Tail Morphology** IMPC_GEO_033_001 | v1.0
simpleParameter


Description: tail_morphology

Options: normal, abnormal, unobservable,

Liver Size IMPC_GEO_037_001 | v1.0

simpleParameter


Description: liver_size

Options: normal, abnormal, unobservable,

Comment on image IMPC_GEO_049_001 | v1.0

simpleParameter


Description: comment_on_image

Images IMPC_GEO_050_001 | v1.0

seriesMediaParameter

Description: images

Increments: Minimum 1

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**Experimenter ID** IMPC_GEO_051_001 | v1.0

procedureMetadata


Description: experimenter_id

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**Equipment ID** IMPC_GEO_052_001 | v1.0

procedureMetadata


Description: equipment_id

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**Equipment Manufacturer** IMPC_GEO_053_001 | v1.0

procedureMetadata


Description: equipment_manufacturer
**Equipment Model** IMPC_GEO_054_001 | v1.0

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

**Description:** equipment_model

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**Fixative** IMPC_GEO_055_001 | v1.0

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

**Description:** fixative

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**Time of Dissection** IMPC_GEO_056_001 | v1.0

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

**Description:** time_of_dissection

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**Somite Stage** IMPC_GEO_057_001 | v1.1

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

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Time of dark cycle start  IMPC_GEO_058_001 | v1.0

procedureMetadata


Description: time_of_dark_cycle_start

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Time of dark cycle end  IMPC_GEO_059_001 | v1.0

procedureMetadata


Description: time_of_dark_cycle_end

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Date equipment last calibrated  IMPC_GEO_060_001 | v1.1

procedureMetadata


Description: date_equipment_last_calibrated

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Hemorrhage IMPC_GEO_009_002 | v2.0

Requirement Analysis: false  Requirement Upload: false  Is Annotated: true

Description: hemorrhage

Options: yes, unobservable, no,

Facial Cleft IMPC_GEO_017_002 | v2.0

Requirement Analysis: false  Requirement Upload: false  Is Annotated: true

Description: facial_cleft

Options: yes, unobservable, no,

Cleft Palate IMPC_GEO_018_002 | v2.0

Requirement Analysis: false  Requirement Upload: false  Is Annotated: true

Description: cleft_palate

Options: yes, unobservable, no,

Polydactyly IMPC_GEO_034_002 | v2.0

Requirement Analysis: false  Requirement Upload: false  Is Annotated: true

Description: cleft_palate

Options: yes, unobservable, no,
Description: polydactyly
Options: yes, unobservable, no,

Pale Liver  IMPC_GEO_038_002  | v2.0
simpleParameter

Description: pale_liver
Options: yes, unobservable, no,

Exencephaly  IMPC_GEO_041_002  | v2.0
simpleParameter

Description: exencephaly
Options: yes, unobservable, no,
**Description:** holoprosencephaly

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

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**spina bifida**  IMPC_GEO_043_002  | v2.0

**simpleParameter**

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

**Description:** spina bifida

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

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**Microphthalmia**  IMPC_GEO_047_002  | v2.3

**simpleParameter**

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

**Description:** microphthalmia

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

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**Anophthalmia**  IMPC_GEO_048_002  | v2.2

**simpleParameter**

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

Options: yes, unobservable, no,

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**Severely Dysmorphic** IMPC_GEO_061_001 | v1.2

*simpleParameter*


Options: no, yes, unobservable,

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**Abdominal wall** IMPC_GEO_062_001 | v1.1

*simpleParameter*


Options: normal, abnormal, unobservable,

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**Craniofacial morphology** IMPC_GEO_063_001 | v1.1

*simpleParameter*


Options: normal, abnormal, unobservable,
Edema IMPC_GEO_064_001 | v1.1
simpleParameter


Options: no, yes, unobservable,

Limb morphology IMPC_GEO_065_001 | v1.1
simpleParameter


Options: normal, abnormal, unobservable,

Microcephaly IMPC_GEO_066_001 | v1.2
simpleParameter


Options: no, yes, unobservable,

Syndactyly IMPC_GEO_067_001 | v1.1
simpleParameter

**CRL**  IMPC_GEO_068_001  |  v1.1

*simpleParameter*

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

**Unit Measured:** mm

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**Delayed embryonic development**  IMPC_GEO_069_001  |  v1.2

*simpleParameter*

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

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**Blebs**  IMPC_GEO_070_001  |  v1.0

*simpleParameter*

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

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**Facial hypoplasia**  IMPC_GEO_071_001  |  v1.0
simpleParameter

**Pallor** IMPC_GEO_072_001 | v1.0

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

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