Gross Morphology Embryo E12.5 IMPC_GEM _003

Purpose

To assess visible morphological defects in E12.5 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: E12.5
- 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, LacZ 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

**Pericardium Morphology** IMPC_GEM_007_001 | v1.0

*simpleParameter*

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

**Description:** pericardium_morphology

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

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**Visceral yolk sac morphology** IMPC_GEM_017_001 | v1.0

*simpleParameter*

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

**Description:** visceral_yolk_sac_morphology

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

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**Embryo Size** IMPC_GEM_019_001 | v1.0

*simpleParameter*

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

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

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**Ear Morphology** IMPC_GEM_021_001 | v1.1

**Description:** abnormal_ear_morphology

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

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**Skin Appearance** IMPC_GEM_024_001 | v1.0

**Description:** skin_appearance

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

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**Limb Bud Morphology** IMPC_GEM_027_001 | v1.0

**Description:**
**Limb Plate Morphology**  IMPC_GEM_028_001 | v1.0

*simpleParameter*

**Description:** limb_plate_morphology

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

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**Tail Morphology** IMPC_GEM_029_001 | v1.0

*simpleParameter*

**Description:** tail_morphology

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

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**Liver Size** IMPC_GEM_032_001 | v1.0

*simpleParameter*
Description: liver_size
Options: normal, abnormal, unobservable,

Neural Tube Closure IMPC_GEM_036_001 | v1.0

Description: neural_tube_closure
Options: normal, abnormal, unobservable,

Eye Morphology IMPC_GEM_041_001 | v1.0

Description: eye_morphology
Options: normal, abnormal, unobservable,

Head shape IMPC_GEM_047_001 | v1.0
Is Annotated: false
Req. Upload: false
Req. Analysis: false
Is Annotated: true

Description: head_shape
Options: normal, abnormal, unobservable,

Comment on image  IMPC_GEM_048_001 | v1.0

simpleParameter

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

Description: comment_on_image

Images  IMPC_GEM_049_001 | v1.0

seriesMediaParameter

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

Description: images
Increments: Minimum 1

Experimenter ID  IMPC_GEM_050_001 | v1.0

procedureMetadata
Description: experimenter_id

Equipment ID  IMPC_GEM_051_001 | v1.0

Description: equipment_id

Equipment Manufacturer  IMPC_GEM_052_001 | v1.0

Description: equipment_manufacturer

Equipment Model  IMPC_GEM_053_001 | v1.0

Description: equipment_model
**Fixative** IMPC_GEM_054_001 | v1.0

procedureMetadata


Description: fixative

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**Time of Dissection** IMPC_GEM_055_001 | v1.0

procedureMetadata


Description: time_of_dissection

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**Somite Stage** IMPC_GEM_056_001 | v1.1

procedureMetadata


Description: somite_stage
**Time of dark cycle start** IMPC_GEM_057_001 | v1.0

procedureMetadata

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

*Description*: time_of_dark_cycle_start

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**Time of dark cycle end** IMPC_GEM_058_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_GEM_059_001 | v1.1

procedureMetadata

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

*Description*: date_equipment_last_calibrated

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**Pale yolk sac** IMPC_GEM_016_002 | v2.0

simpleParameter

*Req. Analysis*: false  
*Req. Upload*: false  
*Is Annotated*: true
Description: pale_yolk_sac
Options: yes, unobservable, no,

Pallor  IMPC_GEM_025_002 | v2.0
simpleParameter


Description: pallor
Options: yes, unobservable, no,

Blebs  IMPC_GEM_026_002 | v2.0
simpleParameter


Description: blebs
Options: yes, unobservable, no,

Pale Liver  IMPC_GEM_033_002 | v2.0
simpleParameter
Description: pale_liver
Options: yes, unobservable, no,

**Microphthalmia** IMPC_GEM_043_002 | v2.3

Description: microphthalmia
Options: yes, unobservable, no,

**Anophthalmia** IMPC_GEM_044_002 | v2.2

Description: anophthalmia
Options: yes, unobservable, no,

**Severely Dysmorphic** IMPC_GEM_060_001 | v1.2
**Abdominal wall**  IMPC_GEM_061_001 | v1.1

simpleParameter

**Craniofacial morphology**  IMPC_GEM_062_001 | v1.1

simpleParameter

**Facial cleft**  IMPC_GEM_063_001 | v1.1

simpleParameter
**Facial hypoplasia** IMPC_GEM_064_001 | v1.1

simpleParameter


Options: no, yes, unobservable,

**Heart looping** IMPC_GEM_065_001 | v1.1

simpleParameter


Options: normal, abnormal, unobservable,

**Heart morphology** IMPC_GEM_066_001 | v1.2

simpleParameter


Options: normal, abnormal, unobservable,
**Left-right axis patterning** IMPC_GEM_067_001 | v1.1

**simpleParameter**

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

**Forebrain morphology** IMPC_GEM_068_001 | v1.1

**simpleParameter**

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

**Hindbrain morphology** IMPC_GEM_069_001 | v1.1

**simpleParameter**

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

**Midbrain morphology** IMPC_GEM_070_001 | v1.1

**simpleParameter**

**Options:** normal, abnormal, unobservable,
**Microcephaly**  IMPC_GEM_071_001 | v1.2

**Rostal-caudal patterning**  IMPC_GEM_072_001 | v1.1

**Vascular morphology**  IMPC_GEM_073_001 | v1.1

Options: normal, abnormal, unobservable,
**CRL** IMPC_GEM_074_001 | v1.1

simpleParameter


Unit Measured: mm

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**Delayed embryonic development** IMPC_GEM_075_001 | v1.3

simpleParameter


Options: no, yes, unobservable,

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**Edema** IMPC_GEM_076_001 | v1.0

simpleParameter


Options: no, yes, unobservable,

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**Hemorrhage** IMPC_GEM_077_001 | v1.0

simpleParameter
Options: no, yes, unobservable,

Polydactyly  IMPC_GEM_078_001 | v1.1
simpleParameter

Options: yes, no, unobservable,

Exencephaly  IMPC_GEM_079_001 | v2.0
simpleParameter

Options: yes, unobservable, no,