Gross Morphology Embryo E12.5 IMPC_GE M_001

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

### Alive

<table>
<thead>
<tr>
<th>IMPC_GEM_001_001</th>
<th>v1.0</th>
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<tbody>
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**Req. Analysis:** false  
**Req. Upload:** false  
**Is Annotated:** false

**Description:** alive

**Options:** yes, no,

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### Scored

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

**Description:** scored

**Options:** yes, no,

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### Cardiovascular System

<table>
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**Req. Analysis:** false  
**Req. Upload:** false  
**Is Annotated:** true

**Description:** cardiovascular_system

**Options:** normal, abnormal, unobservable,
**Cardiovascular Development**  IMPC_GEM_004_001  | v1.0

*simpleParameter*

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

**Description:** cardiovascular_development

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

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**Vascular Development**  IMPC_GEM_005_001  | v1.0

*simpleParameter*

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

**Description:** vascular_development

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

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**Outflow tract development**  IMPC_GEM_006_001  | v1.0

*simpleParameter*

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

**Description:** outflow_tract_development

**Options:** normal, abnormal, unobservable,
**Pericardium Morphology**  IMPC_GEM_007_001  |  v1.0

**Simple Parameter**


Description: pericardium_morphology

Options: normal, abnormal, unobservable,

---

**Absent heartbeat**  IMPC_GEM_008_001  |  v1.0

**Simple Parameter**


Description: absent_heartbeat

Options: normal, abnormal, unobservable,

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**Craniofacial**  IMPC_GEM_009_001  |  v1.0

**Simple Parameter**


Description: craniofacial

Options: normal, abnormal, unobservable,
Craniofacial Development IMPC_GEM_010_001 | v1.0

**simpleParameter**

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

**Description**: craniofacial_development

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

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Embryogenesis Phenotype IMPC_GEM_011_001 | v1.0

**simpleParameter**

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

**Description**: embryogenesis_phenotype

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

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Extraembryonic tissue morphology IMPC_GEM_012_001 | v1.0

**simpleParameter**

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

**Description**: extraembryonic_tissue_morphology

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

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Allantois Morphology IMPC_GEM_013_001 | v1.0

**simpleParameter**
Description: allantois_morphology
Options: normal, abnormal, unobservable,
Description: pale_yolk_sac
Options: normal, abnormal, unobservable,

Visceral yolk sac morphology IMPC_GEM_017_001 | v1.0
simpleParameter

Description: visceral_yolk_sac_morphology
Options: normal, abnormal, unobservable,

Chorioallantoic fusion IMPC_GEM_018_001 | v1.0
simpleParameter

Description: chorioallantoic_fusion
Options: normal, abnormal, unobservable,

Embryo Size IMPC_GEM_019_001 | v1.0
simpleParameter

Description: pale_yolk_sac
Options: normal, abnormal, unobservable,
Description: embryo_size
Options: normal, abnormal, unobservable,

Hearing/Vestibular/Ear Phenotype IMPC_GEM_020_001 | v1.0

simpleParameter

Description: hearing_vestibular_ear_phenotype
Options: normal, abnormal, unobservable,

Ear Morphology IMPC_GEM_021_001 | v1.1

simpleParameter

Description: abnormal_ear_morphology
Options: normal, abnormal, unobservable,

Ear Development IMPC_GEM_022_001 | v1.0

simpleParameter

Description: ear_development
Options: normal, abnormal, unobservable,

**Integument** IMPC_GEM_023_001 | v1.0

*simpleParameter*


Description: integument

Options: normal, abnormal, unobservable,

**Skin Appearance** IMPC_GEM_024_001 | v1.0

*simpleParameter*


Description: skin_appearance

Options: normal, abnormal, unobservable,

**Pallor** IMPC_GEM_025_001 | v1.0

*simpleParameter*


Description: pallor

Options: normal, abnormal, unobservable,
**Blebs**  IMPC_GEM_026_001 | v1.0

`simpleParameter`


**Description:** blebs

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

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

`simpleParameter`


**Description:** limb_bud_morphology

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

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

`simpleParameter`


**Description:** limb_plate_morphology

**Options:** normal, abnormal, unobservable,
Tail Morphology  IMPC_GEM_029_001 | v1.0

**Description:** tail_morphology

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

Liver/Biliary  IMPC_GEM_030_001 | v1.0

**Description:** liver_biliary

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

Liver Morphology  IMPC_GEM_031_001 | v1.0

**Description:** liver_morphology

**Options:** normal, abnormal, unobservable,
Liver Size  IMPC_GEM_032_001 | v1.0

Description: liver_size
Options: normal, abnormal, unobservable,

Pale Liver  IMPC_GEM_033_001 | v1.0

Description: pale_liver
Options: normal, abnormal, unobservable,

Gastroschisis (herniated abdominal wall)  IMPC_GEM_034_001 | v1.0

Description: gastroschisis_herniated_abdominal_wall
Options: normal, abnormal, unobservable,
**Nervous System** IMPC_GEM_035_001 | v1.0

simpleParameter

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

**Description:** nervous_system

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

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**Neural Tube Closure** IMPC_GEM_036_001 | v1.0

simpleParameter

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

**Description:** neural_tube_closure

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

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**Forebrain development** IMPC_GEM_037_001 | v1.0

simpleParameter

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

**Description:** forebrain_development

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

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**Midbrain development** IMPC_GEM_038_001 | v1.0

simpleParameter
Description: midbrain_development
Options: normal, abnormal, unobservable,

Hindbrain development IMPC_GEM_039_001 | v1.0
simpleParameter

Description: hindbrain_development
Options: normal, abnormal, unobservable,

Vision/Eye IMPC_GEM_040_001 | v1.0
simpleParameter

Description: vision_eye
Options: normal, abnormal, unobservable,

Eye Morphology IMPC_GEM_041_001 | v1.0
simpleParameter

Description: vision_eye
Options: normal, abnormal, unobservable,
Description: eye_morphology
Options: normal, abnormal, unobservable,

Eye Size IMPC_GEM_042_001 | v1.0
simpleParameter


Description: eye_size
Options: normal, abnormal, unobservable,

Microphthalmia IMPC_GEM_043_001 | v1.3
simpleParameter


Description: microphthalmia
Options: normal, abnormal, unobservable,

Anophthalmia IMPC_GEM_044_001 | v1.2
simpleParameter

Description: anophthalmia
Options: normal, abnormal, unobservable,

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**Failure heart looping** IMPC_GEM_045_001 | v1.0

*simpleParameter*


Description: failure_heart_looping
Options: normal, abnormal, unobservable,

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**Gastrulation** IMPC_GEM_046_001 | v1.1

*simpleParameter*


Description: abnormal_gastrulation
Options: normal, abnormal, unobservable,

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**Head shape** IMPC_GEM_047_001 | v1.0

*simpleParameter*


Description: head_shape
Options: normal, abnormal, unobservable,

Comment on image IMPC_GEM_048_001 | v1.0

simpleParameter


Description: comment_on_image

Images IMPC_GEM_049_001 | v1.0

seriesMediaParameter


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

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Equipment Manufacturer  IMPC_GEM_052_001 | v1.0

Description: equipment_manufacturer

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Equipment Model  IMPC_GEM_053_001 | v1.0

Description: equipment_model

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Fixative  IMPC_GEM_054_001 | v1.0

Description: false
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

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**Time of dark cycle start** IMPC_GEM_057_001 | v1.0

procedureMetadata


Description: time_of_dark_cycle_start
Time of dark cycle end  IMPC_GEM_058_001 | v1.0

Description: time_of_dark_cycle_end

Date equipment last calibrated  IMPC_GEM_059_001 | v1.1

Description: date_equipment_last_calibrated