Gross Morphology Embryo E12.5 IMPC_GEM_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** IMPC_GEM_001_001 | v1.0

*simpleParameter*


Description: alive

Options: yes, no,

**Scored** IMPC_GEM_002_001 | v1.0

*simpleParameter*


Description: scored

Options: yes, no,

**Cardiovascular System** IMPC_GEM_003_001 | v1.0

*simpleParameter*
Description: cardiovascular_system

Options: normal, abnormal, unobservable,

Cardiovascular Development  IMPC_GEM_004_001  |  v1.0

Description: cardiovascular_development

Options: normal, abnormal, unobservable,

Vascular Development  IMPC_GEM_005_001  |  v1.0

Description: vascular_development

Options: normal, abnormal, unobservable,

Outflow tract development  IMPC_GEM_006_001  |  v1.0
**Description:** outflow_tract_development

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

**Craniofacial Development** IMPC_GEM_010_001 | v1.0

- **Description:** craniofacial
- **Options:** normal, abnormal, unobservable,

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**Embryogenesis Phenotype** IMPC_GEM_011_001 | v1.0

- **Description:** embryogenesis_phenotype
- **Options:** normal, abnormal, unobservable,
**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*

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

*Description:* allantois_morphology

*Options:* normal, abnormal, unobservable,

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**Vitelline vasculature morphology**  IMPC_GEM_014_001 | v1.0

*simpleParameter*

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

*Description:* vitelline_vasculature_morphology

*Options:* normal, abnormal, unobservable,
**Vitelline vein morphology**  IMPC_GEM_015_001 | v1.0

*simpleParameter*

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

**Description:** vitelline_vein_morphology

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

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**Pale yolk sac**  IMPC_GEM_016_001 | v1.0

*simpleParameter*

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

**Description:** pale_yolk_sac

**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,
**Chorioallantoic fusion** IMPC_GEM_018_001 | v1.0

simpleParameter

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

**Description:** chorioallantoic_fusion

**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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**Hearing/Vestibular/Ear Phenotype** IMPC_GEM_020_001 | v1.0

simpleParameter

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

**Description:** hearing_vestibular_ear_phenotype

**Options:** normal, abnormal, unobservable,
**Ear Morphology** IMPC_GEM_021_001 | v1.1

*simpleParameter*

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

**Description:** abnormal_ear_morphology

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

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**Ear Development** IMPC_GEM_022_001 | v1.0

*simpleParameter*

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

**Description:** ear_development

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

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**Integument** IMPC_GEM_023_001 | v1.0

*simpleParameter*

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

**Description:** integument

**Options:** normal, abnormal, unobservable,
Skin Appearance IMPC_GEM_024_001 | v1.0

simpleParameter

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

**Description:** skin_appearance

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

Pallor IMPC_GEM_025_001 | v1.0

simpleParameter

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

**Description:** pallor

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

Blebs IMPC_GEM_026_001 | v1.0

simpleParameter

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

**Description:** blebs

**Options:** normal, abnormal, unobservable,
Limb Bud Morphology  IMPC_GEM_027_001  | v1.0

simpleParameter


Description: limb_bud_morphology

Options: normal, abnormal, unobservable,

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

simpleParameter


Description: tail_morphology

Options: normal, abnormal, unobservable,
**Liver/Biliary** IMPC_GEM_030_001 | v1.0

```plaintext
simpleParameter

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

**Description:** liver_biliary

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

**Liver Morphology** IMPC_GEM_031_001 | v1.0

```plaintext
simpleParameter

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

**Description:** liver_morphology

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

**Liver Size** IMPC_GEM_032_001 | v1.0

```plaintext
simpleParameter

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

**Description:** liver_size

**Options:** normal, abnormal, unobservable,
**Pale Liver** IMPC_GEM_033_001 | v1.0

*simpleParameter*

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

**Description:** pale_liver

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

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**Gastroschisis (herniated abdominal wall)** IMPC_GEM_034_001 | v1.0

*simpleParameter*

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

**Description:** gastroschisis_herniated_abdominal_wall

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

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**Nervous System** IMPC_GEM_035_001 | v1.0

*simpleParameter*

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

**Description:** nervous_system
Neural Tube Closure  IMPC_GEM_036_001 | v1.0

simpleParameter


Description: neural_tube_closure

Options: normal, abnormal, unobservable,

Forebrain development  IMPC_GEM_037_001 | v1.0

simpleParameter


Description: forebrain_development

Options: normal, abnormal, unobservable,

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: eye_morphology

Options: normal, abnormal, unobservable,

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**Eye Size** IMPC_GEM_042_001 | v1.0

simpleParameter


Description: eye_size

Options: normal, abnormal, unobservable,

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**Microphthalmia** IMPC_GEM_043_001 | v1.3

simpleParameter


Description: microphthalmia

Options: normal, abnormal, unobservable,

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**Anophthalmia** IMPC_GEM_044_001 | v1.2

simpleParameter

Description: anophthalmia

Options: normal, abnormal, unobservable,

Failure heart looping IMPC_GEM_045_001 | v1.0


Description: failure_heart_looping

Options: normal, abnormal, unobservable,

Gastrulation IMPC_GEM_046_001 | v1.1


Description: abnormal_gastrulation

Options: normal, abnormal, unobservable,

Head shape IMPC_GEM_047_001 | v1.0

**Description:** head_shape

**Options:** normal, abnormal, unobservable,
**Equipment ID** IMPC_GEM_051_001 | v1.0

**Description:** experimenter_id

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**Equipment Manufacturer** IMPC_GEM_052_001 | v1.0

**Description:** equipment_id

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**Equipment Model** IMPC_GEM_053_001 | v1.0

**Description:** equipment_manufacturer
Fixative  IMPC_GEM_054_001 | v1.0
procedureMetadata


Description: fixative

Time of Dissection  IMPC_GEM_055_001 | v1.0
procedureMetadata


Description: time_of_dissection

Somite Stage  IMPC_GEM_056_001 | v1.1
procedureMetadata


Description: somite_stage

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

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