Gross Morphology Embryo E14.5-E15.5 IMP C_GEO_001

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

**Alive**  IMPC_GEO_001_001 | v1.0

*simpleParameter*


Description: alive  Options: yes, no,

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**Scored**  IMPC_GEO_002_001 | v1.0

*simpleParameter*


Description: scored  Options: yes, no,

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**Cardiovascular System**  IMPC_GEO_003_001 | v1.0

*simpleParameter*

Description: cardiovascular_system
Options: normal, abnormal, unobservable,

Cardiovascular Development  IMPC_GEO_004_001 | v1.0
simpleParameter


Description: cardiovascular_development
Options: normal, abnormal, unobservable,

Heart Development IMPC_GEO_005_001 | v1.0
simpleParameter


Description: heart_development
Options: normal, abnormal, unobservable,

Outflow tract development IMPC_GEO_006_001 | v1.0
simpleParameter
Description: outflow_tract_development
Options: normal, abnormal, unobservable,

Absent heartbeat  IMPC_GEO_007_001 | v1.0
simpleParameter

Description: absent_heartbeat
Options: normal, abnormal, unobservable,

Heart Morphology  IMPC_GEO_008_001 | v1.0
simpleParameter

Description: heart_morphology
Options: normal, abnormal, unobservable,

Hemorrhage  IMPC_GEO_009_001 | v1.0
simpleParameter
Skin Hemorrhage  IMPC_GEO_010_001  | v1.0
simpleParameter

Blood Vessel Morphology  IMPC_GEO_011_001  | v1.0
simpleParameter

Developmental Vascular Remodelling  IMPC_GEO_012_001  | v1.0
simpleParameter
Description: developmental_vascular_remodelling
Options: normal, abnormal, unobservable,
simpleParameter

**Description:** head_shape

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

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**Head size** IMPC_GEO_016_001 | v1.0

simpleParameter

**Description:** head_size

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

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**Facial Cleft** IMPC_GEO_017_001 | v1.0

simpleParameter

**Description:** facial_cleft

**Options:** normal, abnormal, unobservable,
**Cleft Palate**  IMPC_GEO_018_001 | v1.0

**Description:** cleft_palate

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

**Embryo Size**  IMPC_GEO_019_001 | v1.0

**Description:** embryo_size

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

**Body wall morphology**  IMPC_GEO_020_001 | v1.0

**Description:** body_wall_morphology

**Options:** normal, abnormal, unobservable,
**Hearing/Vestibular/Ear**  IMPC_GEO_021_001 | v1.0

simpleParameter


Description: hearing_vestibular_ear

Options: normal, abnormal, unobservable,

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**Ear Morphology**  IMPC_GEO_022_001 | v1.1

simpleParameter


Description: abnormal_ear_morphology

Options: normal, abnormal, unobservable,

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**Ear Development**  IMPC_GEO_023_001 | v1.0

simpleParameter


Description: ear_development

Options: normal, abnormal, unobservable,
**Homeostasis/metabolism** IMPC_GEO_024_001 | v1.0

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

**Description:** homeostasis_metabolism  

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

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**Hydrops fetalis (fetal adema)** IMPC_GEO_025_001 | v1.0

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

**Description:** hydrops_fetalis_fetal_adema  

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

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**Gastroschisis (herniated abdominal wall)** IMPC_GEO_026_001 | v1.0

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

**Description:** gastroschisis_herniated_abdominal_wall  

**Options:** normal, abnormal, unobservable,
**Integument**  IMPC_GEO_027_001  |  v1.0

simpleParameter

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

Description: integument

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,

**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,
**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,

**Limb Bud Morphology** IMPC_GEO_031_001 | v1.0

*simpleParameter*

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

Description: limb_bud_morphology

Options: normal, abnormal, unobservable,

**Limb Plate Morphology** IMPC_GEO_032_001 | v1.0

*simpleParameter*

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

Description: limb_plate_morphology

Options: normal, abnormal, unobservable,
Tail Morphology IMPC_GEO_033_001 | v1.0

simpleParameter


Description: tail_morphology

Options: normal, abnormal, unobservable,

Polydactyly IMPC_GEO_034_001 | v1.0

simpleParameter


Description: polydactyly

Options: normal, abnormal, unobservable,

Liver/Biliary IMPC_GEO_035_001 | v1.0

simpleParameter


Description: liver_biliary

Options: normal, abnormal, unobservable,
Liver Morphology  IMPC_GEO_036_001  | v1.0

simpleParameter


Description: liver_morphology

Options: normal, abnormal, unobservable,

Liver Size  IMPC_GEO_037_001  | v1.0

simpleParameter


Description: liver_size

Options: normal, abnormal, unobservable,

Pale Liver  IMPC_GEO_038_001  | v1.0

simpleParameter


Description: pale_liver

Options: normal, abnormal, unobservable,
**Nervous System**  IMPC_GEO_039_001 | v1.0

**simpleParameter**


*Description:* nervous_system

*Options:* normal, abnormal, unobservable,

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**Brain Development**  IMPC_GEO_040_001 | v1.0

**simpleParameter**


*Description:* brain_development

*Options:* normal, abnormal, unobservable,

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**Exencephaly**  IMPC_GEO_041_001 | v1.0

**simpleParameter**


*Description:* exencephaly
Options: normal, abnormal, unobservable,

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**Holoprosencephaly** IMPC_GEO_042_001 | v1.0

*simpleParameter*

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

**Description:** holoprosencephaly

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

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**spina bifida** IMPC_GEO_043_001 | v1.0

*simpleParameter*

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

**Description:** spina_bifida

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

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**Vision/Eye** IMPC_GEO_044_001 | v1.0

*simpleParameter*

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

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

Eye Morphology IMPC_GEO_045_001 | v1.0

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

Description: eye_morphology

Options: normal, abnormal, unobservable,

Eye Size IMPC_GEO_046_001 | v1.0

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

Description: eye_size

Options: normal, abnormal, unobservable,

Microphthalmia IMPC_GEO_047_001 | v1.3

Requirement Analysis: false  Requirement Upload: false  Is Annotated: true
Description: microphthalmia
Options: normal, abnormal, unobservable,

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**Anophthalmia** IMPC_GEO_048_001 | v1.2
simpleParameter


Description: anophthalmia
Options: normal, abnormal, unobservable,

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**Comment on image** IMPC_GEO_049_001 | v1.0
simpleParameter


Description: comment_on_image

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**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

Description: experimenter_id

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**Equipment ID** IMPC_GEO_052_001 | v1.0

Description: equipment_id

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**Equipment Manufacturer** IMPC_GEO_053_001 | v1.0

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

procedureMetadata

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

Description: equipment_model

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**Fixative** IMPC_GEO_055_001 | v1.0

procedureMetadata

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

Description: fixative

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

procedureMetadata

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
procedureMetadata

**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

**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_GEO_059_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_GEO_060_001 | v1.1

procedureMetadata

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