Gross Morphology Embryo E9.5 IMPC_GEL _003

Purpose

To assess visible morphological defects in E9.5 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: E9.5 and Younger
- 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

Tam somite method for counting somites should be adopted:
Tam scoring system uses a forelimb range of 8 to 15 somite pairs resulting in E9.5 embryos ranging between 25 to 26 somite pairs.

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_GEL_006_001 | v1.0

*simpleParameter*


Description: pericardium_morphology

Options: normal, abnormal, unobservable,

**Embryo turning** IMPC_GEL_011_001 | v1.0

*simpleParameter*


Description: embryo_turning

Options: normal, abnormal, unobservable,

**Allantois Morphology** IMPC_GEL_014_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_GEL_015_001 | v1.0

**simpleParameter**

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

**Description:** vitelline_vasculature_morphology

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

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**Visceral yolk sac morphology**  
IMPC_GEL_018_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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**Chorioallantoic fusion**  
IMPC_GEL_019_001 | v1.0

**simpleParameter**

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

**Description:**

**Options:**
**Branchial arch morphology**  IMPC_GEL_024_001 | v1.0

*simpleParameter*

**Neural tube closure**  IMPC_GEL_027_001 | v1.0

*simpleParameter*

**Forebrain**  IMPC_GEL_028_001 | v1.0

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

Midbrain IMPC_GEL_029_001 | v1.0
simpleParameter


Description: midbrain
Options: normal, abnormal, unobservable,

Hindbrain IMPC_GEL_030_001 | v1.0
simpleParameter


Description: hindbrain
Options: normal, abnormal, unobservable,

Embryo Size IMPC_GEL_032_001 | v1.0
simpleParameter


Description: embryo_size
Options: normal, abnormal, unobservable,

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**Tail bud morphology** IMPC_GEL_033_001 | v1.0

*simpleParameter*


Description: tail_bud_morphology

Options: normal, abnormal, unobservable,

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**Limb Bud Morphology** IMPC_GEL_038_001 | v1.0

*simpleParameter*


Description: limb_bud_morphology

Options: normal, abnormal, unobservable,

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**Otic vesicle morphology** IMPC_GEL_042_001 | v1.0

*simpleParameter*


Description: otic_vesicle_morphology

Options: normal, abnormal, unobservable,
Comment on image IMPC_GEL_043_001 | v1.0

simpleParameter


Description: comment_on_image

Images IMPC_GEL_044_001 | v1.0

seriesMediaParameter


Description: images

Increments: Minimum 1

Experimenter ID IMPC_GEL_045_001 | v1.0

procedureMetadata


Description: experimenter_id

Equipment ID IMPC_GEL_046_001 | v1.0
procedureMetadata


Description: equipment_id

Equipment Manufacturer  IMPC_GEL_047_001 | v1.0


Description: equipment_manufacturer

Equipment Model  IMPC_GEL_048_001 | v1.0


Description: equipment_model

Fixative  IMPC_GEL_049_001 | v1.0


Description: fixative
Time of Dissection  IMPC_GEL_050_001 | v1.0

procedureMetadata


Description: time_of_dissection

Somite Stage  IMPC_GEL_051_001 | v1.0

procedureMetadata


Description: somite_stage

Time of dark cycle start  IMPC_GEL_052_001 | v1.0

procedureMetadata


Description: time_of_dark_cycle_start

Time of dark cycle end  IMPC_GEL_053_001 | v1.0

procedureMetadata

Description: time_of_dark_cycle_end

Date equipment last calibrated IMPC_GEL_054_001 | v1.1

procedureMetadata


Description: date_equipment_last_calibrated

Pale yolk sac IMPC_GEL_017_002 | v2.0

simpleParameter


Description: pale_yolk_sac

Options: yes, unobservable, no,

Pallor IMPC_GEL_036_002 | v2.0

simpleParameter


Description: pallor

Options: yes, unobservable, no,
**Blebs** IMPC_GEL_037_002 | v2.0

*simpleParameter*

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

**Description:** blebs  

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

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**Severely Dysmorphic** IMPC_GEL_055_001 | v1.2

*simpleParameter*

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

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

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**Edema** IMPC_GEL_056_001 | v1.1

*simpleParameter*

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

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

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**Heart looping** IMPC_GEL_057_001 | v1.1

*simpleParameter*
Options: normal, abnormal, unobservable,
Optic vesicle morphology IMPC_GEL_061_001 | v1.1

**simpleParameter**


Options: normal, abnormal, unobservable,

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CRL IMPC_GEL_062_001 | v1.1

**simpleParameter**


Unit Measured: mm

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Delayed embryonic development IMPC_GEL_063_001 | v1.2

**simpleParameter**


Options: no, yes, unobservable,

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Somite Morphology IMPC_GEL_064_001 | v1.0

**simpleParameter**

Options: normal, abnormal, unobservable,

Left-right axis patterning  IMPC_GEL_065_001 | v1.2
simpleParameter


Options: normal, abnormal, unobservable,

Vascular morphology  IMPC_GEL_066_001 | v1.0
simpleParameter


Options: normal, abnormal, unobservable,