Gross Morphology Embryo E9.5 IMPC_GEL_0 02

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

**Alive** IMPC_GEL_001_001 | v1.0

*simpleParameter*

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

**Description:** alive

**Options:** yes, no,

**Scored** IMPC_GEL_002_001 | v1.0

*simpleParameter*

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

**Description:** scored

**Options:** yes, no,
**Cardiovascular System** IMPC_GEL_003_001 | v1.0

*simpleParameter*

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

**Description:** cardiovascular_system

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

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**Cardiovascular Development** IMPC_GEL_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_GEL_005_001 | v1.0

*simpleParameter*

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

**Description:** vascular_development

**Options:** normal, abnormal, unobservable,
**Pericardium Morphology** IMPC_GEL_006_001 | v1.0

**simpleParameter**

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

**Description:** pericardium_morphology

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

**Embryogenesis Phenotype** IMPC_GEL_009_001 | v1.0

**simpleParameter**

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

**Description:** embryogenesis_phenotype

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

**Abnormal Gastrulation** IMPC_GEL_010_001 | v1.0

**simpleParameter**

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

**Description:** abnormal_gastrulation

**Options:** normal, abnormal, unobservable,
**Embryo turning** IMPC_GEL_011_001 | v1.0

**Description:** embryo_turning

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

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**Extraembryonic tissue morphology** IMPC_GEL_013_001 | v1.0

**Description:** extraembryonic_tissue_morphology

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

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**Allantois Morphology** IMPC_GEL_014_001 | v1.0

**Description:** allantois_morphology

**Options:** normal, abnormal, unobservable,
**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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**Vitelline vein morphology**  IMPC_GEL_016_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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**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,
**Chorioallantoic fusion** IMPC_GEL_019_001 | v1.0

simpleParameter

**Description:** chorioallantoic_fusion

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

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**Developmental Patterning** IMPC_GEL_020_001 | v1.0

simpleParameter

**Description:** developmental_patterning

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

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**Left-right axis patterning** IMPC_GEL_021_001 | v1.0

simpleParameter

**Description:** left_right_axis_patterning

**Options:** normal, abnormal, unobservable,
**Direction of heart looping** IMPC_GEL_022_001 | v1.0

*simpleParameter*

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

**Description:** direction_of_heart_looping

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

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**Somite development** IMPC_GEL_023_001 | v1.0

*simpleParameter*

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

**Description:** somite_development

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

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

*simpleParameter*

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

**Description:** branchial_arch_morphology

**Options:** normal, abnormal, unobservable,
**Neural fold morphology**  IMPC_GEL_025_001  |  v1.0

*simpleParameter*

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

**Description:** neural_fold_morphology

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

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**Neural tube morphology/development**  IMPC_GEL_026_001  |  v1.0

*simpleParameter*

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

**Description:** neural_tube_morphology_development

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

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

*simpleParameter*

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

**Description:** neural_tube_closure

**Options:** normal, abnormal, unobservable,
Forebrain  IMPC_GEL_028_001 | v1.0

简单参数

要求分析: false  要求上传: false  已注释: true

描述: forebrain

选项: normal, abnormal, unobservable,

Midbrain  IMPC_GEL_029_001 | v1.0

简单参数

要求分析: false  要求上传: false  已注释: true

描述: midbrain

选项: normal, abnormal, unobservable,

Hindbrain  IMPC_GEL_030_001 | v1.0

简单参数

要求分析: false  要求上传: false  已注释: true

描述: hindbrain

选项: normal, abnormal, unobservable,
Spinal cord IMPC_GEL_031_001 | v1.0

simpleParameter


Description: spinal_cord

Options: normal, abnormal, unobservable,

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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,
**Integument** IMPC_GEL_034_001 | v1.0

*simpleParameter*

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

Description: integument

Options: normal, abnormal, unobservable,

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**Skin Appearance** IMPC_GEL_035_001 | v1.0

*simpleParameter*

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

Description: skin_appearance

Options: normal, abnormal, unobservable,

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

*simpleParameter*

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

Description: limb_bud_morphology
Options: normal, abnormal, unobservable,

Vision/Eye IMPC_GEL_039_001 | v1.0

simpleParameter


Description: vision_eye

Options: normal, abnormal, unobservable,

Eye development IMPC_GEL_040_001 | v1.0

simpleParameter


Description: eye_development

Options: normal, abnormal, unobservable,

Hearing/Vestibular/Ear IMPC_GEL_041_001 | v1.0

simpleParameter


Description: hearing_vestibular_ear
Options: normal, abnormal, unobservable,

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

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

Description: experimenter_id

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**Equipment ID** IMPC_GEL_046_001 | v1.0  
procedureMetadata

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

Description: equipment_id

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**Equipment Manufacturer** IMPC_GEL_047_001 | v1.0  
procedureMetadata

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

Description: equipment_manufacturer
**Equipment Model** IMPC_GEL_048_001 | v1.0

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

**Description:** equipment_model

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**Fixative** IMPC_GEL_049_001 | v1.0

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

**Description:** fixative

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**Time of Dissection** IMPC_GEL_050_001 | v1.0

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

**Description:** time_of_dissection

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**Somite Stage** IMPC_GEL_051_001 | v1.0

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

**Description:** somite_stage
**Time of dark cycle start** IMPC_GEL_052_001 | v1.0

**Description:** time_of_dark_cycle_start

**Time of dark cycle end** IMPC_GEL_053_001 | v1.0

**Description:** time_of_dark_cycle_end

**Date equipment last calibrated** IMPC_GEL_054_001 | v1.1

**Description:** date_equipment_last_calibrated
Failure heart looping  IMPC_GEL_007_002 | v2.0

simpleParameter


Description: failure_heart_looping

Options: yes, unobservable, no,

Absent heartbeat  IMPC_GEL_008_002 | v2.0

simpleParameter


Description: absent_heartbeat

Options: yes, unobservable, no,

Incomplete embryo turning  IMPC_GEL_012_002 | v2.0

simpleParameter


Description: incomplete_embryo_turning

Options: yes, unobservable, no,
**Pale yolk sac** IMPC_GEL_017_002 | v2.0

*simpleParameter*

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

**Description:** pale_yolk_sac

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

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**Pallor** IMPC_GEL_036_002 | v2.0

*simpleParameter*

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

**Description:** pallor

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

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**Blebs** IMPC_GEL_037_002 | v2.0

*simpleParameter*

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

**Description:** blebs

**Options:** yes, unobservable, no,
Severely Dysmorphic  IMPC_GEL_055_001  | v1.2

simpleParameter


Options: no, yes, unobservable,