Gross Morphology Embryo E9.5 IMPC_GEL_002

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,

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,

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

simpleParameter

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

Description: embryo_turning

Options: normal, abnormal, unobservable,

Extraembryonic tissue morphology IMPC_GEL_013_001 | v1.0

simpleParameter

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

Description: extraembryonic_tissue_morphology

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,

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,

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,

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

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

Description: chorioallantoic_fusion

Options: normal, abnormal, unobservable,

Developmental Patterning IMPC_GEL_020_001 | v1.0

simpleParameter

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

Description: developmental_patterning

Options: normal, abnormal, unobservable,

Left-right axis patterning IMPC_GEL_021_001 | v1.0

simpleParameter

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

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,

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,

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 mophology IMPC_GEL_025_001 | v1.0

simpleParameter

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

Description: neural_fold_mophology

Options: normal, abnormal, unobservable,

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,

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

simpleParameter

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

Description: forebrain

Options: normal, abnormal, unobservable,

Midbrain IMPC_GEL_029_001 | v1.0

simpleParameter

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

Description: midbrain

Options: normal, abnormal, unobservable,

Hindbrain IMPC_GEL_030_001 | v1.0

simpleParameter

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

Description: hindbrain

Options: normal, abnormal, unobservable,

Spinal cord IMPC_GEL_031_001 | v1.0

simpleParameter

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

Description: spinal_cord

Options: normal, abnormal, unobservable,

Embryo Size IMPC_GEL_032_001 | v1.0

simpleParameter

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

Description: embryo_size

Options: normal, abnormal, unobservable,

Tail bud morphology IMPC_GEL_033_001 | v1.0

simpleParameter

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

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,

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,

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

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

Description: vision_eye

Options: normal, abnormal, unobservable,

Eye development IMPC_GEL_040_001 | v1.0

simpleParameter

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

Description: eye_development

Options: normal, abnormal, unobservable,

Hearing/Vestibular/Ear IMPC_GEL_041_001 | v1.0

simpleParameter

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

Description: hearing_vestibular_ear

Options: normal, abnormal, unobservable,

Otic vesicle morphology IMPC_GEL_042_001 | v1.0

simpleParameter

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

Description: otic_vesicle_morphology

Options: normal, abnormal, unobservable,

Comment on image IMPC_GEL_043_001 | v1.0

simpleParameter

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

Description: comment_on_image

Images IMPC_GEL_044_001 | v1.0

seriesMediaParameter

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

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

Equipment ID IMPC_GEL_046_001 | v1.0

procedureMetadata

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

Description: equipment_id

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

procedureMetadata

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

Description: equipment_model

Fixative IMPC_GEL_049_001 | v1.0

procedureMetadata

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

Description: fixative

Time of Dissection IMPC_GEL_050_001 | v1.0

procedureMetadata

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

Description: time_of_dissection

Somite Stage IMPC_GEL_051_001 | v1.0

procedureMetadata

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

Description: somite_stage

Time of dark cycle start IMPC_GEL_052_001 | v1.0

procedureMetadata

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

Description: time_of_dark_cycle_start

Time of dark cycle end IMPC_GEL_053_001 | v1.0

procedureMetadata

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

Description: time_of_dark_cycle_end

Date equipment last calibrated IMPC_GEL_054_001 | v1.1

procedureMetadata

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

Description: date_equipment_last_calibrated

Failure heart looping IMPC_GEL_007_002 | v2.0

simpleParameter

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

Description: failure_heart_looping

Options: yes, unobservable, no,

Absent heartbeat IMPC_GEL_008_002 | v2.0

simpleParameter

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

Description: absent_heartbeat

Options: yes, unobservable, no,

Incomplete embryo turning IMPC_GEL_012_002 | v2.0

simpleParameter

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

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,

Pallor IMPC_GEL_036_002 | v2.0

simpleParameter

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

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,

Severely Dysmorphic IMPC_GEL_055_001 | v1.2

simpleParameter

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

Options: no, yes, unobservable,