Gross Morphology Embryo E18.5 IMPC_GE P_003

Purpose

To assess visible morphological defects in E18.5 embryos from lethal or subviable 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**: E18.5 and Older
- 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

**Heart Morphology**  IMPC_GEP_010_001  |  v1.0

*simpleParameter*


Description: heart_morphology

Options: normal, abnormal, unobservable,

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**Blood Vessel Morphology**  IMPC_GEP_013_001  |  v1.0

*simpleParameter*


Description: blood_vessel_morphology

Options: normal, abnormal, unobservable,

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**Head shape**  IMPC_GEP_015_001  |  v1.0

*simpleParameter*


Description: head_shape

Options: normal, abnormal, unobservable,
**Head size**  IMPC_GEP_016_001 | v1.0

*simpleParameter*

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

**Description:** head_size

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

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**Facial Morphology**  IMPC_GEP_017_001 | v1.0

*simpleParameter*

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

**Description:** facial_morphology

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

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**Embryo Size**  IMPC_GEP_022_001 | v1.0

*simpleParameter*

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

**Description:** embryo_size

**Options:** normal, abnormal, unobservable,
**Embryo weight**  IMPC_GEP_023_001 | v1.0
*simpleParameter*


Description: embryo_weight

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**Body wall morphology**  IMPC_GEP_024_001 | v1.0
*simpleParameter*


Description: body_wall_morphology

Options: normal, abnormal, unobservable,

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**Outer ear morphology**  IMPC_GEP_026_001 | v1.0
*simpleParameter*


Description: outer_ear_morphology

Options: normal, abnormal, unobservable,

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**Vibrissa Morphology**  IMPC_GEP_033_001 | v1.0
*simpleParameter*
Description: vibrissa_morphology
Options: normal, abnormal, unobservable,

Skin Appearance  IMPC_GEP_034_001  | v1.0
simpleParameter

Description: skin_appearance
Options: normal, abnormal, unobservable,

Pallor  IMPC_GEP_035_001  | v1.0
simpleParameter

Description: pallor
Options: normal, abnormal, unobservable,

Skin Coloration  IMPC_GEP_036_001  | v1.0
simpleParameter

Description: skin_appearance
Options: normal, abnormal, unobservable,
Description: skin_coloration

Options: normal, abnormal, unobservable,

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**Tail Morphology** IMPC_GEP_038_001 | v1.0

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simpleParameter
```


Description: tail_morphology

Options: normal, abnormal, unobservable,

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**Liver Size** IMPC_GEP_042_001 | v1.0

```
simpleParameter
```


Description: liver_size

Options: normal, abnormal, unobservable,

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**Respiratory System** IMPC_GEP_052_001 | v1.0

```
simpleParameter
```


Description: respiratory_system
Options: normal, abnormal, unobservable,

Comment on image IMPC_GEP_063_001 | v1.0

simpleParameter


Description: comment_on_image

Images IMPC_GEP_064_001 | v1.0

seriesMediaParameter


Description: images

Increments: Minimum 1

Experimenter ID IMPC_GEP_065_001 | v1.0

procedureMetadata


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**Time of Dissection**  IMPC_GEP_070_001 | v1.0

procedureMetadata


Description: time_of_dissection

**Somite Stage**  IMPC_GEP_071_001 | v1.1

procedureMetadata


Description: somite_stage

**Time of dark cycle start**  IMPC_GEP_072_001 | v1.0

procedureMetadata


Description: time_of_dark_cycle_start
**Time of dark cycle end**  IMPC_GEP_073_001 | v1.0

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

  **Description:** time_of_dark_cycle_end

**Date equipment last calibrated**  IMPC_GEP_074_001 | v1.1

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

  **Description:** date_equipment_last_calibrated

**Spontaneous movement**  IMPC_GEP_004_002 | v2.2

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

  **Description:** no_spontaneous_movement

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

**Responsive to tactile stimuli**  IMPC_GEP_005_002 | v2.2

- **Req. Analysis:** false   **Req. Upload:** false   **Is Annotated:** false
Description: unresponsive_to_tactile_stimuli
Options: yes, unobservable, no,

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**Hemorrhage** IMPC_GEP_011_002 | v2.0

Description: hemorrhage
Options: yes, unobservable, no,

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**Facial Cleft** IMPC_GEP_018_002 | v2.0

Description: facial_cleft
Options: yes, unobservable, no,

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**Cyanosis** IMPC_GEP_029_002 | v2.0

Description: cyanosis
Options: yes, unobservable, no,

Edema IMPC_GEP_030_002 | v2.0

simpleParameter


Description: edema

Options: yes, unobservable, no,

Polydactyly IMPC_GEP_039_002 | v2.0

simpleParameter


Description: polydactyly

Options: yes, unobservable, no,

Exencephaly IMPC_GEP_047_002 | v2.0

simpleParameter


Description: exencephaly

Options: yes, unobservable, no,
Holoprosencephaly  IMPC_GEP_048_002  | v2.0

**Description:** holoprosencephaly

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

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spina bifida  IMPC_GEP_049_002  | v2.0

**Description:** spina bifida

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

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Microphthalmia  IMPC_GEP_059_002  | v2.0

**Description:** microphthalmia

**Options:** yes, unobservable, no,
**Anophthalmia** IMPC_GEP_060_002 | v2.0

*simpleParameter*

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

**Description:** anophthalmia

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

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**Failure of Eyelid Fusion** IMPC_GEP_061_002 | v2.0

*simpleParameter*

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

**Description:** failure_ofEyelid_fusion

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

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**Severely Dysmorphic** IMPC_GEP_075_001 | v1.2

*simpleParameter*

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

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

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**Cleft palate** IMPC_GEP_076_001 | v1.1

*simpleParameter*
Curl or short tail  IMPC_GEP_078_001 | v1.1

Facial hypoplasia  IMPC_GEP_079_001 | v1.1

Microcephaly  IMPC_GEP_080_001 | v1.2
**Pale liver**  IMPC_GEP_081_001 | v1.1

*simpleParameter*

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

*Options:* no, yes, unobservable,

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**Syndactyly**  IMPC_GEP_082_001 | v1.1

*simpleParameter*

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

*Options:* no, yes, unobservable,

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**Tongue out**  IMPC_GEP_083_001 | v1.1

*simpleParameter*

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

*Options:* no, yes, unobservable,

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**Limb morphology**  IMPC_GEP_084_001 | v1.1

*simpleParameter*

*Req. Analysis:* false  *Req. Upload:* false  *Is Annotated:* true
Options: normal, abnormal, unobservable,

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**CRL** IMPC_GEP_085_001 | v1.1

simpleParameter


Unit Measured: mm

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**Delayed embryonic development** IMPC_GEP_086_001 | v1.2

simpleParameter


Options: no, yes, unobservable,

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**Blebs** IMPC_GEP_087_001 | v1.0

simpleParameter


Options: no, yes, unobservable,