Gross Morphology Embryo E18.5 IMPC_GEP_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,

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**Head size** IMPC_GEP_016_001 | v1.0

simpleParameter

Required Analysis: false  
Required 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

Required Analysis: false  
Required 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
**Description:** embryo_size

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

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**Embryo weight** IMPC_GEP_023_001 | v1.0

**Description:** embryo_weight

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

**Description:** body_wall_morphology

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

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

**Description:**

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**Description:** outer_ear_morphology

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

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**Vibrissa Morphology**  IMPC_GEP_033_001 | v1.0

*simpleParameter*

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

**Description:** vibrissa_morphology

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

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**Skin Appearance**  IMPC_GEP_034_001 | v1.0

*simpleParameter*

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

**Description:** skin_appearance

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

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**Pallor**  IMPC_GEP_035_001 | v1.0

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

Skin Coloration  IMPC_GEP_036_001 | v1.0

Description: skin_coloration
Options: normal, abnormal, unobservable,

Tail Morphology  IMPC_GEP_038_001 | v1.0

Description: tail_morphology
Options: normal, abnormal, unobservable,

Liver Size  IMPC_GEP_042_001 | v1.0
Description: liver_size
Options: normal, abnormal, unobservable,

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

Description: experimenter_id

**Equipment ID** IMPC_GEP_066_001 | v1.0

procedureMetadata

Description: equipment_id

**Equipment Manufacturer** IMPC_GEP_067_001 | v1.0

procedureMetadata

Description: equipment_id
**Equipment Model** IMPC_GEP_068_001 | v1.0

Description: equipment_manufacturer

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**Fixative** IMPC_GEP_069_001 | v1.0

Description: fixative

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

Description: time_of_dissection
**Somite Stage** IMPC_GEP_071_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_GEP_072_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_GEP_073_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_GEP_074_001 | v1.1

*procedureMetadata*
Spontaneous movement IMPC_GEP_004_002 | v2.2
simpleParameter

Description: no_spontaneous_movement
Options: yes, unobservable, no,

Responsive to tactile stimuli IMPC_GEP_005_002 | v2.2
simpleParameter

Description: unresponsive_to_tactile_stimuli
Options: yes, unobservable, no,

Hemorrhage IMPC_GEP_011_002 | v2.0
simpleParameter
Description: hemorrhage
Options: yes, unobservable, no,

Facial Cleft IMPC_GEP_018_002 | v2.0

Description: facial_cleft
Options: yes, unobservable, no,

Cyanosis IMPC_GEP_029_002 | v2.0

Description: cyanosis
Options: yes, unobservable, no,

Edema IMPC_GEP_030_002 | v2.0
Description: edema
Options: yes, unobservable, no,
holoprosencephaly

Options: yes, unobservable, no,

spina bifida |IMPC_GEP_049_002| v2.0

microphthalmia |IMPC_GEP_059_002| v2.0

Anophthalmia |IMPC_GEP_060_002| v2.0
**Anophthalmia**

**Description:** anophthalmia

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

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

**Description:** failure_of_eyelid_fusion

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

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**Severely Dysmorphic**  
IMPC_GEP_075_001 | v1.2

**Description:**

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

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**Cleft palate**  
IMPC_GEP_076_001 | v1.1

**Description:**

**Options:**
**Curl or short tail** IMPC_GEP_078_001 | v1.1

*simpleParameter*

**Facial hypoplasia** IMPC_GEP_079_001 | v1.1

*simpleParameter*

**Microcephaly** IMPC_GEP_080_001 | v1.2

*simpleParameter*
**Pale liver**  IMPC_GEP_081_001 | v1.1

`simpleParameter`

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

Options: no, yes, unobservable,

**Syndactyly**  IMPC_GEP_082_001 | v1.1

`simpleParameter`

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

Options: no, yes, unobservable,

**Tongue out**  IMPC_GEP_083_001 | v1.1

`simpleParameter`

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

Options: no, yes, unobservable,
Limb morphology IMPC_GEP_084_001 | v1.1

**simpleParameter**

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

Options: normal, abnormal, unobservable,

CRL IMPC_GEP_085_001 | v1.1

**simpleParameter**

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

Unit Measured: mm

Delayed embryonic development IMPC_GEP_086_001 | v1.2

**simpleParameter**

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

Options: no, yes, unobservable,

Blebs IMPC_GEP_087_001 | v1.0

**simpleParameter**

Req. Analysis: false  
Req. Upload: false  
Is Annotated: true
Options: no, yes, unobservable,