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

**Holoprosencephaly**  IMPC_GEP_048_002  | v2.0

*simpleParameter*


Options: yes, unobservable, no

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**Severely Dysmorphic**  IMPC_GEP_075_001  | v1.2

*simpleParameter*


Options: no, yes, unobservable,

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**Facial hypoplasia**  IMPC_GEP_079_001  | v1.1

*simpleParameter*


Options: unobservable, no, yes,
**Images** IMPC_GEP_064_001 | v1.0

SeriesMediaParameter


Increments: Minimum 1

**CRL** IMPC_GEP_085_001 | v1.1

SimpleParameter


Unit Measured: mm

**Pallor** IMPC_GEP_035_001 | v1.0

SimpleParameter


Options: unobservable, normal, abnormal,

**Failure of Eyelid Fusion** IMPC_GEP_061_002 | v2.0
**Comment on image** IMPC_GEP_063_001 | v1.0

Equipment Model IMPC_GEP_068_001 | v1.0

Respiratory System IMPC_GEP_052_001 | v1.0
**Skin Coloration** IMPC_GEP_036_001 | v1.0

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

**Delayed embryonic development** IMPC_GEP_086_001 | v1.2
Options: unobservable, yes, no,

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**Tail Morphology** IMPC_GEP_038_001 | v1.0

*simpleParameter*


Options: abnormal, unobservable, normal,

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

*procedureMetadata*


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**Polydactyly** IMPC_GEP_039_002 | v2.0

*simpleParameter*


Options: no, yes, unobservable,
**Equipment ID** IMPC_GEP_066_001 | v1.0

*procedureMetadata*

**Limb morphology** IMPC_GEP_084_001 | v1.1

*simpleParameter*

**Blebs** IMPC_GEP_087_001 | v1.0

*simpleParameter*

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

*simpleParameter*
Spontaneous movement IMPC_GEP_004_002 | v2.2
simpleParameter


Options: yes, no, unobservable,

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Experimenter ID IMPC_GEP_065_001 | v1.0
procedureMetadata


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Embryo Size IMPC_GEP_022_001 | v1.0
simpleParameter


Options: normal, unobservable, abnormal,

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Body wall morphology IMPC_GEP_024_001 | v1.0
simpleParameter
Options: normal, unobservable, abnormal,

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**spina bifida** IMPC_GEP_049_002 | v2.0

simpleParameter

Options: no, yes, unobservable,

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**Facial Cleft** IMPC_GEP_018_002 | v2.0

simpleParameter

Options: no, yes, unobservable,

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**Head shape** IMPC_GEP_015_001 | v1.0

simpleParameter

Options: unobservable, abnormal, normal,
Skin Appearance  IMPC_GEP_034_001 | v1.0

simpleParameter


Options: abnormal, normal, unobservable,

Fixative  IMPC_GEP_069_001 | v1.0

procedureMetadata


Cleft palate  IMPC_GEP_076_001 | v1.1

simpleParameter


Options: yes, unobservable, no,

Heart Morphology  IMPC_GEP_010_001 | v1.0

simpleParameter
Options: abnormal, unobservable, normal,

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

*simpleParameter*

Options: unobservable, yes, no,

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

*procedureMetadata*

Options: yes, unobservable, no,
**Head size** IMPC_GEP_016_001 | v1.0

*simpleParameter*


Options: normal, abnormal, unobservable,

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**Cyanosis** IMPC_GEP_029_002 | v2.0

*simpleParameter*


Options: yes, unobservable, no,

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**Exencephaly** IMPC_GEP_047_002 | v2.0

*simpleParameter*


Options: no, yes, unobservable,

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**Syndactyly** IMPC_GEP_082_001 | v1.1

*simpleParameter*
**Equipment Manufacturer**  IMPC_GEP_067_001 | v1.0

**Microcephaly**  IMPC_GEP_080_001 | v1.2

**Tongue out**  IMPC_GEP_083_001 | v1.1

Options: no, unobservable, yes,
Vibrissa Morphology  IMPC_GEP_033_001  | v1.0

simpleParameter


Options: unobservable, abnormal, normal,

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Responsive to tactile stimuli  IMPC_GEP_005_002  | v2.2

simpleParameter


Options: yes, unobservable, no,

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Pale liver  IMPC_GEP_081_001  | v1.1

simpleParameter


Options: yes, unobservable, no,

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Hemorrhage  IMPC_GEP_011_002  | v2.0

simpleParameter
Facial Morphology  IMPC_GEP_017_001 | v1.0
  simpleParameter

  Options: unobservable, no, yes,

Anophthalmia  IMPC_GEP_060_002 | v2.0
  simpleParameter

  Options: no, yes, unobservable,

Microphthalmia  IMPC_GEP_059_002 | v2.0
  simpleParameter

  Options: yes, unobservable, no,
**Date equipment last calibrated** IMPC_GEP_074_001 | v1.1

**Embryo weight** IMPC_GEP_023_001 | v1.0

**Liver Size** IMPC_GEP_042_001 | v1.0

**Somite Stage** IMPC_GEP_071_001 | v1.1