

# 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  $\geq 2$  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

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: heart\_morphology

Options: normal, abnormal, unobservable,

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### Blood Vessel Morphology IMPC\_GEP\_013\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: blood\_vessel\_morphology

Options: normal, abnormal, unobservable,

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### Head shape IMPC\_GEP\_015\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

**Description:** head\_shape

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

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## **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,

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## **Embryo weight** IMPC\_GEP\_023\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** embryo\_weight

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## **Body wall morphology** IMPC\_GEP\_024\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** body\_wall\_morphology

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

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## **Outer ear morpholgy** IMPC\_GEP\_026\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** outer\_ear\_morpholgy

**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

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** pallor

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

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## **Skin Coloration** IMPC\_GEP\_036\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** skin\_coloration

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

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## **Tail Morphology** IMPC\_GEP\_038\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** tail\_morphology

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

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## **Liver Size** IMPC\_GEP\_042\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** liver\_size

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

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## **Respiratory System** IMPC\_GEP\_052\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** respiratory\_system

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

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## **Comment on image** IMPC\_GEP\_063\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** comment\_on\_image

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## **Images** IMPC\_GEP\_064\_001 | v1.0

seriesMediaParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** images

**Increments:** Minimum 1

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## **Experimenter ID** IMPC\_GEP\_065\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** experimenter\_id

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## **Equipment ID** IMPC\_GEP\_066\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** equipment\_id

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## **Equipment Manufacturer** IMPC\_GEP\_067\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false



**Description:** equipment\_manufacturer

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## **Equipment Model** IMPC\_GEP\_068\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** equipment\_model

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## **Fixative** IMPC\_GEP\_069\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** fixative

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## **Time of Dissection** IMPC\_GEP\_070\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

**Description:** time\_of\_dissection

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## 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

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** date\_equipment\_last\_calibrated

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## **Spontaneous movement** IMPC\_GEP\_004\_002 | v2.2

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

**Description:** no\_spontaneous\_movement

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

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## **Responsive to tactile stimuli** IMPC\_GEP\_005\_002 | v2.2

simpleParameter

**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

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** hemorrhage

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

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## **Facial Cleft** IMPC\_GEP\_018\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** facial\_cleft

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

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## **Cyanosis** IMPC\_GEP\_029\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** cyanosis

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

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## **Edema** IMPC\_GEP\_030\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** edema

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

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## **Polydactyly** IMPC\_GEP\_039\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** polydactyly

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

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## **Exencephaly** IMPC\_GEP\_047\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** exencephaly

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

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## **Holoprosencephaly** IMPC\_GEP\_048\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** holoprosencephaly

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

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## **spina bifida** IMPC\_GEP\_049\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** spina\_bifida

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

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## **Microphthalmia** IMPC\_GEP\_059\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** microphthalmia

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

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## **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\_of\_eyelid\_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

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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## **Curl or short tail** IMPC\_GEP\_078\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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## **Facial hypoplasia** IMPC\_GEP\_079\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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## **Microcephaly** IMPC\_GEP\_080\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,



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## **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

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Unit Measured: mm

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## Delayed embryonic development IMPC\_GEP\_086\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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## Blebs IMPC\_GEP\_087\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

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