

# Gross Morphology Embryo E12.5 IMPC\_GEM\_003

## Purpose

To assess visible morphological defects in E12.5 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**: E12.5
- 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, LacZ 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

### Severely Dysmorphic IMPC\_GEM\_060\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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### Time of dark cycle start IMPC\_GEM\_057\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

### Rostal-caudal patterning IMPC\_GEM\_072\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, abnormal, unobservable,

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## Heart looping IMPC\_GEM\_065\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, unobservable, normal,

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## Embryo Size IMPC\_GEM\_019\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, abnormal, normal,

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## Abdominal wall IMPC\_GEM\_061\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, normal, unobservable,

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## Liver Size IMPC\_GEM\_032\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, normal, abnormal,

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## Equipment Manufacturer IMPC\_GEM\_052\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Anophthalmia IMPC\_GEM\_044\_002 | v2.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: yes, unobservable, no,

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## Time of Dissection IMPC\_GEM\_055\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Craniofacial morphology IMPC\_GEM\_062\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, unobservable, normal,

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## Heart morphology IMPC\_GEM\_066\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, abnormal, normal,

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## Facial cleft IMPC\_GEM\_063\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, no, yes,

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## Pallor IMPC\_GEM\_025\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

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## **Comment on image** IMPC\_GEM\_048\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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## **Edema** IMPC\_GEM\_076\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## **Hindbrain morphology** IMPC\_GEM\_069\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## Facial hypoplasia IMPC\_GEM\_064\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: yes, no, unobservable,

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## Fixative IMPC\_GEM\_054\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Midbrain morphology IMPC\_GEM\_070\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, normal, abnormal,

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## Limb Bud Morphology IMPC\_GEM\_027\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, normal, unobservable,

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## **Blebs** IMPC\_GEM\_026\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## **CRL** IMPC\_GEM\_074\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Unit Measured:** mm

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## **Equipment Model** IMPC\_GEM\_053\_001 | v1.0

procedureMetadata

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## **Hemorrhage** IMPC\_GEM\_077\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, no, yes,

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## Pericardium Morphology IMPC\_GEM\_007\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, unobservable, abnormal,

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## Experimenter ID IMPC\_GEM\_050\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Limb Plate Morphology IMPC\_GEM\_028\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, normal, unobservable,

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## Neural Tube Closure IMPC\_GEM\_036\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, abnormal, normal,

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## Microcephaly IMPC\_GEM\_071\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, unobservable, yes,

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## Date equipment last calibrated IMPC\_GEM\_059\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Eye Morphology IMPC\_GEM\_041\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

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

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## **Tail Morphology** IMPC\_GEM\_029\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## **Pale Liver** IMPC\_GEM\_033\_002 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## **Polydactyly** IMPC\_GEM\_078\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

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

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## Skin Appearance IMPC\_GEM\_024\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, abnormal, unobservable,

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## Somite Stage IMPC\_GEM\_056\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Vascular morphology IMPC\_GEM\_073\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, abnormal, unobservable,

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## Equipment ID IMPC\_GEM\_051\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Head shape IMPC\_GEM\_047\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Description: head\_shape

Options: normal, abnormal, unobservable,

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## Time of dark cycle end IMPC\_GEM\_058\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Microphthalmia IMPC\_GEM\_043\_002 | v2.3

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, unobservable, yes,

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## Left-right axis patterning IMPC\_GEM\_067\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: unobservable, abnormal, normal,

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## Pale yolk sac IMPC\_GEM\_016\_002 | v2.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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## Visceral yolk sac morphology IMPC\_GEM\_017\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, normal, unobservable,

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## Images IMPC\_GEM\_049\_001 | v1.0

seriesMediaParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Increments: Minimum 1

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## Ear Morphology IMPC\_GEM\_021\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: abnormal, unobservable, normal,

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## Forebrain morphology IMPC\_GEM\_068\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: normal, abnormal, unobservable,

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## Delayed embryonic development IMPC\_GEM\_075\_001 | v1.3

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: true

Options: no, yes, unobservable,

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# Exencephaly IMPC\_GEM\_079\_001 | v2.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** true

**Description:** exencephaly

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

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