

# Viability E14.5-E15.5 Secondary Screen IMP C\_EVO\_001

## Purpose

To assess the viability, sub-viability, and lethality of homozygous embryos at E14.5 or E15.5

## 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.
- Collect embryos at E14.5 or E15.5
- Collect tissue and genotype embryos.

## Procedure

1. **Set up timed mating with heterozygous animals. Aim to dissect and collect  $\geq 28$  alive embryos, otherwise lethal and subviable calls cannot be made. If more than three homozygous pups are produced before 28 pups are genotyped, a viable call can be made.**
2. **Collect tissue for genotyping and (OPTIONAL) score Gross Morphology and/or process for Histopathology and or Imaging.**
3. **Genotype all embryos and**
  - a. **Strains that produce NO existing homozygous embryos will be considered LETHAL (complete embryonic lethality [MP:TBC]).**
  - b. **Strains that produce NO live (absence of heartbeat) homozygous embryos will be considered LETHAL (complete embryonic lethality [MP:TBC]).**
  - c. **Strains that produce live homozygous embryos but with an obvious defect will be left to the discretion of the center with the decision and reason recorded in the parameters.**
  - d. **X-linked strains that produce NO live hemizygous male embryos from female carriers will be considered LETHAL (complete embryonic lethality [MP:TBC]).**
4. **Flag strains that produce less than normal numbers of homozygous/hemizygous male progeny**
  - a. **Strains that produce  $< 50\%$  expected homozygous progeny will be annotated as partial embryonic lethality [MP:TBC].**
  - b. **X-linked strains that produce  $< 50\%$  expected male hemizygous progeny from female carriers will be considered partial embryonic lethality [MP:TBC].**

## Notes

## Data QC

All genotypes should be collected using validated assays.

Y chromosome assay required for X-linked lethal strains.

## Data Analysis, annotation and display (+statistics)

Total Embryos: All, WT, Het, Hom

- Alive, dead, and defect (all genotyped)

Total Dead: All, WT, Het, Hom

Total Defect (Alive or Dead): All, WT, Het, Hom

- Abnormal and dead embryos

Litter size: all genotyped embryos

- ignore partials and reabsorptions.

## Parameters and Metadata

### Outcome IMPC\_EVO\_001\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: true

**Options:** Homozygous - Viable, Homozygous - Lethal, Homozygous - Subviable, Insufficient numbers to make a call, Hemizygous - Lethal, Hemizygous - Viable,

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### Decision IMPC\_EVO\_002\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

**Options:** Attempt to Image, Nothing to Image, Go to E9.5, Go to E18.5,

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## **Comment on Decision (in English)** IMPC\_EVO\_003\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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## **Total embryos** IMPC\_EVO\_004\_001 | v1.1

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## **Total embryos WT** IMPC\_EVO\_005\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## **Total embryos heterozygous** IMPC\_EVO\_006\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** true

**Is Annotated:** false

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## Total embryos homozygous IMPC\_EVO\_007\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total dead embryos IMPC\_EVO\_008\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total dead WT IMPC\_EVO\_009\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total dead heterozygous IMPC\_EVO\_010\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total dead homozygous IMPC\_EVO\_011\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total gross defect at dissection (alive or dead) embryos IM

PC\_EVO\_012\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total gross defect at dissection (alive or dead) WT IMPC\_EV

O\_013\_001 | v1.3

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total gross defect at dissection (alive or dead) heterozygous IMPC\_EVO\_014\_001 | v1.4

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Total gross defect at dissection (alive or dead)

homozygous IMPC\_EVO\_015\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Number of reabsorptions IMPC\_EVO\_016\_001 | v1.1

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Average Litter Size IMPC\_EVO\_017\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## % embryos WT IMPC\_EVO\_018\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: %

Derivation: div('IMPC\_EVO\_005\_001', 'IMPC\_EVO\_004\_001')

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## **% embryos heterozygous** IMPC\_EVO\_019\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: %

Derivation: div('IMPC\_EVO\_006\_001', 'IMPC\_EVO\_004\_001')

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## **% embryos homozygous** IMPC\_EVO\_020\_001 | v1.2

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

Unit Measured: %

Derivation: div('IMPC\_EVO\_007\_001', 'IMPC\_EVO\_004\_001')

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## **Time of dark cycle start** IMPC\_EVO\_021\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## **Time of dark cycle end** IMPC\_EVO\_022\_001 | v1.1

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

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## Embryo medium IMPC\_EVO\_023\_001 | v1.0

procedureMetadata

Req. Analysis: false

Req. Upload: true

Is Annotated: false

Options: Warm PBS, Ice,

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## Total live embryos IMPC\_EVO\_024\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Total live heterozygous IMPC\_EVO\_025\_001 | v1.0

simpleParameter

Req. Analysis: false

Req. Upload: false

Is Annotated: false

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## Total live WT IMPC\_EVO\_026\_001 | v1.0



simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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## **Total live homozygous** IMPC\_EVO\_027\_001 | v1.0

simpleParameter

**Req. Analysis:** false

**Req. Upload:** false

**Is Annotated:** false

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