

Viability E14.5-E15.5 Secondary Screen IMPC_EVO_001

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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 (at least 28 total)
- Collect tissue and genotype embryos.

Procedure

1. **Set up timed mating with heterozygous animals. Dissect and collect ≥ 28 alive embryos.**
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 (3 or fewer) homozygous progeny will be annotated as partial embryonic lethality [MP:TBC].**
 - b. **X-linked strains that produce $< 50\%$ expected (3 or fewer) 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.

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Total live embryos IMPC_EVO_024_001	1.0	simpleParameter									INT
Total live WT IMPC_EVO_026_001	1.0	simpleParameter									INT
Total live heterozygous IMPC_EVO_025_001	1.0	simpleParameter									INT
Total live homozygous IMPC_EVO_027_001	1.0	simpleParameter									INT
Number of reabsorptions IMPC_EVO_016_001	1.1	simpleParameter									INT
Average Litter Size IMPC_EVO_017_001	1.0	simpleParameter									FLOAT
% embryos WT IMPC_EVO_018_001	1.2	simpleParameter							IMPC_EVO_005_001 IMPC_EVO_004_001 /	%	FLOAT
% embryos heterozygous IMPC_EVO_019_001	1.2	simpleParameter							IMPC_EVO_006_001 IMPC_EVO_004_001 /	%	FLOAT
% embryos homozygous IMPC_EVO_020_001	1.2	simpleParameter							IMPC_EVO_007_001 IMPC_EVO_004_001 /	%	FLOAT

Metadata

	Version	Type	Req. Upload	Req. Analysis	Annotation	Increment	Option	Ontology Options	Derived	Unit	Data Type
Time of dark cycle start IMPC_EVO_021_001	1.0	procedureMetadata	✓								TIME
Time of dark cycle end IMPC_EVO_022_001	1.1	procedureMetadata	✓								TIME
Embryo medium IMPC_EVO_023_001	1.0	procedureMetadata	✓				Warm PBS Ice				TEXT