Fertility of Homozygous Knock-out Mice

Purpose

To assess the fertility of homozygous knockout mice.

Experimental Design

- Minimum 1 hom x hom mating for fertile mice and minimum of 2 failed hom x hom matings attempts to proceed to secondary screen.
  - Secondary screen: Minimum 2 Hom x 1 WT or Het (Male) , Minimum 2 Hom x 1 WT or Het (Female)
- Minimal age at test = minimal age at start of procedure = 8 weeks.
- Maximum age at test = To be confirmed, proposed 14 weeks
- Minimum length of test (time mice left in mating) 4 - 6 weeks

Procedure

1. Homozygous mice (minimum age of 8 weeks, maximum age of 14 weeks) are mated for 4-6 weeks. Strains that produce no progeny or pregnant dams after 4 to 6 weeks progress to secondary screening.
2. Secondary Male Infertility Screen:
   1. Set up 2 separate matings: male Hom x female WT or Het
      1. Observe matings for 4 to 6 weeks;
      2. Matings that result in visibly pregnant females (confirmed by dissection) or pups will be scored MALE FERTILE.
      3. Matings that do not result in pregnancy will be scored MALE INFERTILITY.
3. Secondary Female Infertility Screen
   1. Set up 2 separate matings: female Hom x male WT or Het
      2. Observe matings for 4 to 6 weeks;
      1. Matings that result in visibly pregnant females (confirmed by dissection) or pups will be scored FEMALE FERTILE.
      2. Matings that do not result in pregnancy will be scored FEMALE INFERTILITY.

Notes

Pregnancies should be confirmed.

All annotations are based on yes/no scores.

Parameters and Metadata
**Gross Findings Male**  IMPC_FER_001_001  |  v1.4  
simpleParameter

Req. Analysis: false  
Req. Upload: true  
Is Annotated: true

Description: gross_findings

Options: Fertile, Infertile,

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**Pups born (primary)**  IMPC_FER_002_001  |  v1.3  
simpleParameter

Req. Analysis: false  
Req. Upload: false  
Is Annotated: false

Unit Measured: count

Description: pups_born_primary_

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**Total matings (primary)**  IMPC_FER_003_001  |  v1.2  
simpleParameter

Req. Analysis: false  
Req. Upload: false  
Is Annotated: false

Unit Measured: count

Description: total_matings_primary_
**Total litters (primary)** IMPC_FER_004_001 | v1.3

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

*Unit Measured:* count

*Description:* total_litters_primary_

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**Total pups with dissection (primary)** IMPC_FER_005_001 | v1.5

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

*Unit Measured:* count

*Description:* total_pups_primary_

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**Pups born (Male screen)** IMPC_FER_006_001 | v1.5

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

*Unit Measured:* count

*Description:* pups_born_male_screen_
Total matings (Male screen) IMPC_FER_007_001 | v1.4

**simpleParameter**


Unit Measured: count

Description: total_matings_male_screen_

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Total litters (Male screen) IMPC_FER_008_001 | v1.1

**simpleParameter**


Unit Measured: count

Description: total_litters_male_screen_

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Total pups/embryos (Male Screen) IMPC_FER_009_001 | v1.2

**simpleParameter**


Unit Measured: count

Description: total_pups_embryos_male_screen_
**Pups born (Female Screen)** IMPC_FER_010_001 | v1.5

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

**Unit Measured:** count

**Description:** pups_born_female_screen_

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**Total matings (Female Screen)** IMPC_FER_011_001 | v1.4

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

**Unit Measured:** count

**Description:** total_matings_female_screen_

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**Total litters (Female Screen)** IMPC_FER_012_001 | v1.1

*simpleParameter*

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

**Unit Measured:** count

**Description:** total_litters_female_screen_
**Total pups/embryos (Female Screen) IMPC_FER_013_001 | v1.2**

- **Req. Analysis:** false
- **Req. Upload:** false
- **Is Annotated:** false

**Unit Measured:** count

**Description:** total_pups_embryos_female_screen_

**Age of set up IMPC_FER_014_001 | v1.0**

- **Req. Analysis:** false
- **Req. Upload:** true
- **Is Annotated:** false

**Unit Measured:** Weeks

**Description:** age_of_set_up

**Time spent in breeding IMPC_FER_015_001 | v1.2**

- **Req. Analysis:** false
- **Req. Upload:** true
- **Is Annotated:** false

**Unit Measured:** days

**Description:** time_breeding
**Test strain genotype** IMPC_FER_016_001 | v1.1

**Procedure Metadata**

- **Req. Analysis:** false
- **Req. Upload:** true
- **Is Annotated:** false

**Description:** test_strain_genotype

**Options:** Heterozygous, Wild type, Homozygous, Hemizygous,

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**Test strain background secondary (MGI ID)** IMPC_FER_017_001 | v1.2

**Procedure Metadata**

- **Req. Analysis:** false
- **Req. Upload:** true
- **Is Annotated:** false

**Description:** test_strain_background

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**Date of matings** IMPC_FER_018_001 | v1.2

**Procedure Metadata**

- **Req. Analysis:** false
- **Req. Upload:** false
- **Is Annotated:** false

**Description:** date_of_matings
**Gross Findings Female**  IMPC_FER_019_001  |  v1.3

**simpleParameter**

**Req. Analysis:** false  **Req. Upload:** true  **Is Annotated:** true

**Options:** Fertile, Infertile,

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**Age of set up (Male screen)**  IMPC_FER_020_001  |  v1.1

**procedureMetadata**

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

**Unit Measured:** Weeks

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**Age of set up (Female screen)**  IMPC_FER_021_001  |  v1.0

**procedureMetadata**

**Req. Analysis:** false  **Req. Upload:** false  **Is Annotated:** false

**Unit Measured:** Weeks

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**Time spent in breeding (Male screen)**  IMPC_FER_022_001  |  v1.0

**procedureMetadata**
Time spent in breeding (Female screen) IMPC_FER_023_001 | v1.0

procedureMetadata