

B6.Cg-Hprt^{tm363a(hs1218-icre/ERT2)Ems}/Mmjax

MMRRC Stock No: **037386-JAX** | hs1218-icre/frt/ERT2/frt;mEMS6070

 Congenic, Targeted Mutation

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hs1218-icre/frt/ERT2/frt;mEMS6070 mice have the hs1218-icre/frt/ERT2/frt transgene targeted as a single copy "knock-in" into the upstream region of the hypoxanthine guanine phosphoribosyl transferase (*Hprt*) locus on the X Chromosome. This is designed to allow specific portions from the promoter/enhancer/regulatory sequences of human enhancer element hs1218 to direct expression of a tamoxifen-inducible, improved Cre recombinase (*icre/ERT2*). In these mice, the *icre/ERT2* estrogen receptor sequences are flanked with *frt* sites.

Donating Investigator

Elizabeth M Simpson, Centre for Molecular Medicine & Therapeutics, University of British Columbia

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GENETIC OVERVIEW

Genetic Background

Generation

Hprt^{tm363a(hs1218-icre/ERT2)Ems}

Allele Type

Targeted (Recombinase-expressing, Inducible)

Gene Symbol

Hprt

Gene Name

hypoxanthine guanine phosphoribosyl transferase

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RESEARCH APPLICATIONS

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Details

Detailed Description

hs1218-*icre/frt/ERT2/frt*;mEMS6070 mice have the hs1218-*icre/frt/ERT2/frt* transgene targeted as a single copy "knock-in" into the upstream region of the hypoxanthine guanine phosphoribosyl transferase (*Hprt*) locus on the X Chromosome. Heterozygous females and hemizygous males are viable and fertile, with specific portions from the promoter/enhancer/regulatory sequences of human enhancer element hs1218 directing expression of the tamoxifen-inducible, improved Cre recombinase (*icre/ERT2*). In these mice, the *icre/ERT2* estrogen receptor sequences are flanked with *frt* sites. The donating investigator reports RT PCR expression as "Positive (Telencephalon, Diencephalon, Midbrain)." The phenotype of homozygous mice has not been evaluated to date (January 2014).

The *iCre/ER^{T2}* fusion protein used here consists of a codon-improved Cre recombinase fused to a G400V/M543A/L544A triple mutant form of the human estrogen receptor which does not bind its natural ligand (17 β -estradiol) at physiological concentrations but will bind the synthetic estrogen receptor ligands 4-hydroxytamoxifen (OHT or tamoxifen) and, with lesser sensitivity, ICI 182780. Restricted to the cytoplasm, *iCre/ER^{T2}* can only gain access to the nuclear compartment after exposure to tamoxifen. To counteract the mixed estrogen agonist effects of tamoxifen injections, which can result in late fetal abortions in pregnant mice, progesterone may be coadministered. The *iCre/ER^{T2}* fusion protein used here has also been modified to have F3-*frt* sites flanking the estrogen receptor sequences.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Hprt^{tm363a(hs1218-icre/ERT2)Ems}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

– Technical Support

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Standard PCR:[Generic iCre](#)

Probe:[Generic iCre Probe](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

The targeted mutation is on the X chromosome. When maintaining a live colony, heterozygous females may be bred with wildtype males from the colony or with C57BL/6J inbred males (Stock No. [000664](#)). Alternatively, wildtype females from the colony or C57BL/6J inbred females may be bred with hemizygous males. Homozygous females and hemizygous males are expected to be viable and fertile. The expected coat color is black.

[Additional Breeding and Husbandry Support](#)

Citation

When using the hs1218-icre/frt/ERT2/frt;mEMS6070 mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #037386 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, [G200](#)

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