

B6.Cg-Hprt^{tm357(Ple278-icre/ERT2)Ems}/Mmjax

MMRRC Stock No: **037380-JAX**

 Congenic, Targeted Mutation

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upstream region of the hypoxanthine guanine phosphoribosyl transferase (*Hprt*) locus on the X Chromosome. This is designed to allow the promoter/enhancer/regulatory regions of the human potassium voltage-gated channel, shaker-related subfamily, member 4 (*KCNA4*) locus to direct expression of the tamoxifen-inducible, improved Cre recombinase (*icre/ERT2*).

Donating Investigator

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

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GENETIC OVERVIEW

Genetic Background

Generation

Hprt^{tm357(Ple278-icre/ERT2)Ems}

Alele Type

Targeted (Recombinase-expressing, Inducible)

Gene Symbol

Hprt

Gene Name

hypoxanthine guanine phosphoribosyl transferase

VIEW GENETICS

RESEARCH APPLICATIONS

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Details

Detailed Description

Ple278-*icre/ERT2*;mEMS6120 mice have the Ple278-*icre/ERT2* 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 the promoter/enhancer/regulatory regions of the human potassium voltage-gated channel, shaker-related subfamily, member 4 (*KCNA4*) locus directing expression of the tamoxifen-inducible, improved Cre recombinase (*icre/ERT2*). The donating investigator reports RT PCR expression as "Positive (Diencephalon, Telencephalon, Olfactory Bulb)." 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.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Hprt^{tm357(Ple278-icre/ERT2)Ems}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

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:[Hprt](#)

[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 B6.Cg-*Hprt*^{tm357(Ple278-icre/ERT2)Ems}/Mmjax mouse strain in a publication, please [cite the originating article\(s\)](#) and include MMRRC stock #037380 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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