The Jackson Laboratory

B6.Cg-*Hprt* $^{tm335(Ple277\text{-}icre/ERT2)Ems}$ /Mmjax

MMRRC Stock No: **037065-JAX**

Congenic, Targeted Mutation

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icre/ERT2)Ems>/Mmjax, HTR1B-creERT2

Ple277-icre/ERT2;mEMS5794 mice have the Ple277-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. This is designed to allow the promoter/enhancer/regulatory regions of the human 5-hydroxytraptamine (serotonin) receptor 1B (*HTR1B*) 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$^{tm335(Ple277\text{-}icre/ERT2)Ems}$

Allele Type	Gene Symbol	Gene Name
Targeted (Recombinase-expressing, Inducible)	*Hprt*	hypoxanthine guanine phosphoribosyl transferase

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RESEARCH APPLICATIONS

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Details

Detailed Description

Ple277-icre/ERT2;mEMS5794 mice have the Ple277-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 5-hydroxytraptamine (serotonin) receptor 1B (*HTR1B*) locus directing expression of the tamoxifen-inducible, improved Cre recombinase (*icre/ERT2*). The donating investigator reports RT PCR expression as "Faint Positive (Telencephalon, Cerebellum)." 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 (17β-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$^{tm335(Ple277\text{-}icre/ERT2)Ems}$

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols

Standard PCR:Hprt
Genotyping resources and troubleshooting

Breeding Considerations

The targeted mutation in 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*$^{tm335(Ple277\text{-}icre/ERT2)Ems}$/Mmjax mouse strain in a publication, please cite the originating article(s) and include MMRRC stock #037065 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

THE JACKSON LABORATORY'S GENOTYPE PROMISE

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. **Therefore, we cannot guarantee a strain's phenotype will meet all expectations.** To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

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