B6;D2-Gm33925 Tn(pb-CAG-cas9*,-EGFP)1Yangh/J

Stock No: 031645 | Cre-dependent SPH (SunTag-p65-HSF1)

Transposon Induced Mutation

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Estimated to begin distribution on: Nov 26, 2018

Also Known As: Cre-dependent SPH (SunTag-p65-HSF1), CRISPR–dCas9-activator transgenic mice

These SPH mice express dCas9 (nuclease-deactivated) and EGFP in a Cre recombinase inducible system to allow simultaneous overexpression of multiple genes and lncRNAs, when an sgRNA array is used. When used in combination with single guide RNAs and a Cre source, these mice have applications in studies of mRNA dosing effects, in vivo genome-wide gain-of-function screens, disease modeling and in vivo cell reprogramming.

Donating Investigator

Hui Yang, Chinese Academy of Sciences

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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<tbody>
<tr>
<td>?+pN1</td>
<td>(2018-09-21 00:00:00)</td>
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Gm33925 Tn(pb-CAG-cas9*,-EGFP)1Yangh

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Transposon induced (Conditional ready (e.g. floxed), Reporter, Epitope tag, Endonuclease)</td>
<td>Gm33925</td>
<td>predicted gene, 33925</td>
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</tbody>
</table>

VIEW GENETICS

RESEARCH APPLICATIONS
Details

Detailed Description

These SPH mice express Cre recombinase dependent nuclease-deactivated dCas9 and EGFP, under the control of the CAG promoter. When crossed to a strain expressing Cre recombinase, or transfected with cre-expression plasmids to remove floxed STOP cassette, the resulting progeny mice will express both dCas9 and EGFP in the cre-expressing tissues. Induction of dCas9 can also be detected using antibodies. When used in combination with single guide RNAs and a Cre source, they allow simultaneous activation and overexpression of multiple mouse genes and long noncoding RNAs in vivo or ex vivo. Inverse PCR analysis revealed that the transgene insertion site is downstream of the Gm33925 locus, but other undetected insertion sites are possible. Heterozygotes are viable and fertile. Homozygous viability/fertility has not been tested (April 2018). When crossed to mice expressing Cre recombinase in GFAP-Cre (JAX Stock No. 004600), transgene expression is detected in astrocytes. When sgRNAs for neurogenic transcription factors: Ascl1, Neurog2 and Neurod1 were delivered to the resulting bi-transgenic mice, mature astrocytes were converted into neurons.

Development

Expression Data

Control Suggestions

Selected References

Genetics

Gm33925

Disease/Phenotype

Disease Terms

Research Areas By Genotype
Genotyping Protocols
MELT: Gm33925
Tn(pB-CAG-cas9*-EGFP1Yangh
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, heterozygous mice may be bred to wildtype siblings, or to C57BL/6J inbred mice (Stock No. 000664).

Heterozygotes are viable and fertile. Homozygous viability/fertility has not been tested (April 2018).

Additional Breeding and Husbandry Support

Mating System
Heterozygote x Wild-type
Wild-type x Heterozygote

Citation
When using the Cre-dependent SPH (SunTag-p65-HSF1) mouse strain in a publication, please cite the originating article(s) and include JAX stock #031645 in your Materials and Methods section.

Animal Health Reports

Pricing & Availability

Estimated to begin distribution on: Nov 26, 2018

<table>
<thead>
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<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Heterozygous for Gm33925 Tn(pB-CAG-cas9*-EGFP1Yangh</td>
<td>$255.00</td>
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<tr>
<td>Approx 4-8 weeks</td>
<td>Male</td>
<td>Heterozygous for Gm33925 Tn(pB-CAG-cas9*-EGFP1Yangh</td>
<td>$255.00</td>
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<tr>
<td>Approx 4-8 weeks</td>
<td>Female</td>
<td>Wild-type for Gm33925 Tn(pB-CAG-cas9*-EGFP1Yangh</td>
<td>$76.22</td>
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<td>$76.22</td>
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