B6N.129-Ptpn5^{tm1Pjlo}/J

Stock No: 016556

Congenic Targeted Mutation

CRYO RECOVERY

PLACE ORDER
Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

In this STEP KO strain, a neo cassette replaces the catalytic site of the protein tyrosine phosphatase, non-receptor type 5 (Ptpn5) gene, abolishing gene expression. These mice may be useful for studying the role of STEP in regulating synaptic plasticity in Alzheimer’s Disease.

Donating Investigator
Paul Lombroso, Yale University School of Medicine

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GENETIC OVERVIEW

<table>
<thead>
<tr>
<th>Genetic Background</th>
<th>Generation</th>
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Ptpn5^{tm1Pjlo}

<table>
<thead>
<tr>
<th>Allele Type</th>
<th>Gene Symbol</th>
<th>Gene Name</th>
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<tbody>
<tr>
<td>Targeted (Null/Knockout)</td>
<td>Ptpn5</td>
<td>protein tyrosine phosphatase, non-receptor type 5</td>
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</table>

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research
Developmental Biology Research
Research Tools
Mouse/Human Gene Homologs
Cell Biology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE
Starting at:
$2,595.00 Domestic price Cryo Recovery

VIEW PRICE LIST

Details

Detailed Description
In this STEP KO strain, a neo cassette replaces the catalytic site of the protein tyrosine phosphatase, non-receptor type 5 (Ptpn5) gene, abolishing gene expression. Homozygotes are viable, fertile, and normal in size. Striatal enriched protein phosphatase (STEP) is a neuron-specific tyrosine phosphatase which regulates synaptic plasticity following glutamatergic and dopaminergic input. Expressed mainly in the striatum, hippocampus, amygdala, and cortex of the brain, glutamate-activated STEP controls synaptic plasticity through limiting the duration of ERK 1/2 MAP kinase activity and by endocytosis of glutamate receptors. Activation of ERK1/2 in STEP-expressing regions of the brain is required for memory formation and learning. STEP levels are also shown to be increased in prefrontal cortex of Alzheimer’s Disease (AD) models. Homozygous STEP KO mice lack expression of all STEP isoforms, and exhibit enhanced phosphorylation of ERK1/2 in the striatum, hippocampus, and amygdala, with slight elevation in the lateral septum. Heterozygous mice display a 50% reduction in STEP expression when compared to wildtype littermates. This decrease in STEP levels reverses cognitive and cellular deficits observed in AD mice, and blocks internalization of glutamate receptors. These mice may be useful for studying the role of STEP in regulating synaptic plasticity in Alzheimer’s Disease.

Development

Control Suggestions

Selected References

Genetics

Ptpn5tm1Pja

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support
Genotyping Protocols
Standard PCR: Pttn5<sup>tm1Pjo</sup>
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together.
Additional Breeding and Husbandry Support

Citation
When using the B6.129-Pttn5<sup>tm1Pjo</sup> /J mouse strain in a publication, please cite the originating article(s) and include JAX stock #016556 in your Materials and Methods section.

Animal Health Reports
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

Pricing & Availability

Typically mice are recovered in 10-14 weeks. Contact Customer Service to place an order or for more information.

<table>
<thead>
<tr>
<th>Cryorecovery - Domestic Pricing</th>
<th>GENOTYPE</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Heterozygous for Pttn5&lt;sup&gt;tm1Pjo&lt;/sup&gt;</td>
<td>$2,595.00</td>
</tr>
</tbody>
</table>

We will fulfill your order by providing at least two carriers for each strain ordered. The total number, sex, and genotypes provided will vary, although typically 8 or more animals are provided. Please check genotypes which will be recovered. While the genotypes of all animals produced will be communicated to you prior to scheduling shipment, the genotypes of animals provided may not reflect the mating scheme and genotypes described in the strain description. Animals are typically ready to ship in 11-14 weeks. If a second recovery is required to produce the minimum number of animals, then delivery time would increase to approximately 25 weeks. If we fail to produce animals of the correct genotype, you will not be charged. We cannot guarantee the reproductive success of mice shipped to your facility. If the mice are lost after the first three days (post-arrival) or do not produce progeny at your facility, a new order and fee will be necessary.

Cryorecovery to establish a Dedicated Supply for greater quantities of mice. Mice recovered can be used to establish a dedicated colony to contractually supply you mice according to your requirements. Price by quotation.

Related Products and Services

| Frozen Mouse Embryo | $2,595.00 per straw or vial |

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