Also Known As:loxTB Mc4r

loxTB Mc4r mice are also available on a C57BL/6J genetic background as Stock No. 032518.

loxTB Mc4r has a loxP-flanked transcriptional blocker upstream of the Mc4r ATG site - resulting in disrupted Mc4r expression. Exposure to Cre recombinase restores endogenous Mc4r expression. These mutant mice may be useful in studies of neurobiology, obesity, diabetes, hunger/appetite, and fat and energy metabolism.
Details

The mice have a \(\text{loxp}\)-flanked transcriptional blocking (\(\text{loxB}\)) sequence that prevents normal endogenous gene transcription and translation from the endogenous locus. As such, homozygous mice are devoid of functional mRNA in all tested regions of the brain. Homozygous mice exhibit obesity, accompanied by hyperphagia, increased snout-anus length and hyperinsulinemia. In 2018, The Jackson Laboratory colony, on the mixed B6;129S4 background and maintained on standard chow diet, shows that homozygous mice are significantly heavier than sex-matched wildtype controls by approximately 6-8 weeks of age (more obvious for female homozygotes at a younger age), and obesity (30g) is apparent at approximate 7 weeks of age for homozygous males and approximately 10 weeks of age for homozygous females.

The function of this disrupted allele can be restored by the enzymatic activity of Cre-recombinase. These mutant mice may be useful...
in studies of neurobiology, obesity, diabetes, hunger/appetite, and fat and energy metabolism.

When bred to a strain expressing Cre recombinase in the hypothalamus see Stock No. 006395 for example), this mutant mouse strain exhibits as intermediate phenotype in comparison to homozygous null mice.

When crossed to STOCK Slc32a1<sup>tm2(cre)Lowl</sup>/J (see Stock No. 016962) Cre recombinase expression in inhibitory GABAergic neuron cell bodies results in offspring that exhibit obesity.

When crossed to B6;129S-Oxt<sup>tm1.1(cre)Dolsn</sup>/J (see Stock No. 024234) Cre recombinase expression in oxytocin-expressing cells results in offspring that exhibit obesity.
Breeding Considerations
Although homozygous mice are viable and fertile, the donating investigator breeds heterozygous mice together to generate homozygous, heterozygous, and wildtype mice.

Of note: In 2018, The Jackson Laboratory colony, on the mixed B6;129S4 background and maintained on standard chow diet, shows that homozygous mice are significantly heavier than sex-matched wildtype controls by approximately 6-8 weeks of age (more obvious for female homozygotes at a younger age), and obesity (30g) is apparent at approximate 7 weeks of age for homozygous males and approximately 10 weeks of age for homozygous females.

Additional Breeding and Husbandry Support
Mating System
Heterozygote x Heterozygote

Citation
When using the loxTB Mc4r mouse strain in a publication, please cite the originating article(s) and include JAX stock #006414 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

Pricing & Availability

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

Domestic

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<th>SERVICE/PRODUCT</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
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<tbody>
<tr>
<td>Cryo Recovery</td>
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International

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