C3Bir.129P2(B6)-Iil10tm1Cgn/LtJ

Stock No: 003968 | IL-10 KO

- 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.

Also Known As: IL-10 KO

This strain represents a genetic mouse model of inflammatory bowel disease (IBD) where stable inflammatory lesions in the cecum and colon are present by six to seven weeks of ages. The mice carry a targeted mutation of the interleukin 10 gene, one of several genes whose disruption induces IBD.

Donating Investigator

Dr. Edward Leiter, The Jackson Laboratory

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<th>Genetic Background</th>
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<td><strong>Tlr4&lt;sup&gt;Lps-d&lt;/sup&gt;</strong></td>
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<td>Allele Type</td>
<td>Gene Symbol</td>
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<tr>
<td>Spontaneous</td>
<td>Tlr4</td>
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<td><strong>Il10&lt;sup&gt;tm1Cgn&lt;/sup&gt;</strong></td>
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<tr>
<td>Allele Type</td>
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<td>Targeted (Null/Knockout)</td>
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VIEW GENETICS

Cancer Research
Immunology, Inflammation and Autoimmunity Research
Hematological Research
Starting at:

$2,595.00 Domestic price Cryo Recovery

Details

Detailed Description

Mice homozygous for the Il10<sup>Δm<sup>1Cgn</sup></sup> targeted mutation are viable and fertile when housed under specific pathogen free (SPF) conditions. Under conventional housing conditions, Il10-deficiency is associated with altered lymphocyte and myeloid profiles, elevated serum amyloid A levels, altered responses to inflammatory or autoimmune stimuli (both endogenous and induced), increased prevalence of colorectal adenocarcinoma (especially on 129/Sv and, to a lesser extent, BALB/c genetic background), and spontaneous development of chronic enterocolitis (see below). As The Jackson Laboratory Repository maintains these mice at high health status conditions (high SPF), the observed or experimentally-induced Il10-deficient phenotype may vary from that previously published using mice from conventional mouse rooms. These IL-10 mutant mice may be useful studying inflammatory bowel disease (IBD) (Crohn’s disease (CD) and/or colitis), cancer, innate and adaptive immunity, and many other areas of inflammatory or autoimmunity research.

The onset and severity of both spontaneous and experimentally-induced inflammatory phenotype of Il10-deficient mice is strongly influenced by the genetic background and the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained.

For example, inflammatory bowel disease (IBD; colitis and Crohn’s disease) severity in mouse models is dependent upon interactions between specific genetic background and environmental factors (an as yet undefined component of the enteric flora of which Helicobacter spp. appear to be associated, but not specifically the environmental trigger). Both spontaneous and induced models of IBD demonstrate that susceptibility to intestinal inflammation varies markedly among inbred strains of mice. Generally, for Il10-deficient models on defined genetic backgrounds, the severity of colitis-related characteristics is most severe on this C3H/HeJ/Bir background (Stock No. 003968) or 129/Sv (Stock No. 004368), intermediate on BALB/cJ (Stock No. 004333) or NOD/Lt (Stock No. 004266), and least severe on C57BL/10 (Stock No. 002250) or C57BL/6J (Stock No. 002251). Furthermore, the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained significantly alter the onset and severity of spontaneous IBD: higher SPF conditions are associated with attenuated colitis. Il10-deficient mice on both the C3H/HeJ/Bir and C57BL/6J genetic backgrounds exhibit a significant increase in peripheral blood granulocyte populations upon lesion development and this metric may be used as a robust non-lethal assessment of Il10-deficiency induced colitis onset and severity. Other indications of Il10-deficiency induced colitic lesion onset may include perianal ulceration (C3H/HeJ/Bir background) or rectal prolapse (C57BL/6J background).

Development

Control Suggestions

Selected References
Genetics

Tlr4Lpr-d

Il10tm1Cgn

Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols
High Resolution Melting: Il10tm1Cgn
Standard PCR: Il10tm1Cgn
Genotyping resources and troubleshooting

Breeding Considerations
When maintaining a live colony, homozygous mice may be bred together. As homozygous mice are more susceptible to pathogenic bacteria, high specific pathogen-free (SPF) conditions are recommended for optimal breeding. However, the onset and severity of both the spontaneous and experimentally-induced inflammatory phenotype of Il10-deficient mice is strongly influenced by the genetic background and the husbandry conditions (specific health status/commensal flora) of the vivaria in which mice are maintained and such high SPF conditions may attenuate the desired Il10-deficient phenotype.

Additional Breeding and Husbandry Support

Citation
When using the Il10-KO mouse strain in a publication, please cite the originating article(s) and include JAX stock #003968 in your Materials and Methods section.

Facility Barrier Level Descriptions

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

Pricing & Availability
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.

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