

B10.129P2(B6)-*Il10*^{tm1Cgn} /JStock No: **002250** | IL-10 KO Congenic, Targeted Mutation

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spontaneous development of chronic enterocolitis. These mutant mice may be useful studying inflammatory bowel disease, Crohn's disease and/or colitis, cancer, innate and adaptive immunity, and many other areas of inflammatory or autoimmunity research.

[R E A D M O R E +](#)

GENETIC OVERVIEW

Genetic Background**Generation***Il10^{tm1Cgn}***Allele Type****Gene Symbol****Gene Name**

Targeted (Null/Knockout)

Il10

interleukin 10

[V I E W G E N E T I C S](#)

RESEARCH APPLICATIONS

Cancer Research

Hematological Research

Immunology, Inflammation and Autoimmunity Research

[V I E W A L L R E S E A R C H A P P L I C A T I O N S](#)**BASE PRICE**

Starting at:

\$2,854.50 Domestic price Cryo Recovery

V I E W P R I C E L I S T

Details

Detailed Description

Mice homozygous for the *Il10*^{tm1Cgn} 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 C3H/HeJBir (Stock No. [004326](#) and 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/HeJBir 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/HeJBir background) or rectal prolapse (C57BL/6J background).

Development

Control Suggestions

Selected References

Genetics

– Disease/Phenotype

+ Disease Terms

+ Research Areas By Phenotype

+ Mammalian Phenotype Terms by Genotype

+ References

– Technical Support

C O N T A C T T E C H N I C A L S U P P O R T

Genotyping Protocols

Standard PCR:[Il10](#)

Standard PCR:[Il10](#)

[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](#)

Mating System

Homozygote x Homozygote

Appearance

black

Related Genotype: *a/a*

Citation

When using the IL-10 KO mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #002250 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

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Domestic International

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SERVICE/PRODUCT	DESCRIPTION	PRICE
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Phone: 207-288-6470

Email: TechTran@jax.org

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