

C.129S4-Icos^{tm1Shr} /J

Stock No: **017605**

 Congenic, Targeted Mutation

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hyperreactivity (AHR)). As ICOS-ligand expressing vascular endothelial cells facilitate leukocyte recruitment into tissues and metastatic dissemination of tumor cells, these mice may also be useful in studying cancer, metastasis, and antitumor responses.

Donating Investigator

Arlene H Sharpe, Harvard Medical School

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GENETIC OVERVIEW

Genetic Background

Generation

Icos^{tm1Shr}

Alele Type

Gene Symbol

Gene Name

Targeted (Null/Knockout)

Icos

inducible T cell co-stimulator

VIEW GENETICS

RESEARCH APPLICATIONS

Virology Research

Research Tools

Cell Biology Research

Cancer Research

Immunology, Inflammation and Autoimmunity Research

Internal/Organ Research

Hematological Research

BASE PRICE

Starting at:

\$2,854.50 Domestic price Cryo Recovery

VIEW PRICE LIST

Details

Detailed Description

The inducible T cell co-stimulator (ICOS) molecule is a T cell-specific molecule that belongs to the CD28 / CTLA-4 / B7 immunoglobulin superfamily. The activation and function of conventional class II MHC-restricted CD4⁺ T cells is regulated by T cell receptor (TCR)-signaling and costimulatory molecular pathways (such as the ICOS / ICOS-ligand pathway). ICOS and its ligand (ICOSL / B7h / B7RP-1) have diverse roles in T-cell responses such as mediating autoimmunity, as well as enhancing the development and activity of regulatory T cells. ICOS has a critical role in lung mucosal inflammatory responses mediated, at least in part, by activation and function of invariant NK T cells (*i*NKT cells). Of note, ICOS-ligand expressing vascular endothelial cells facilitate leukocyte recruitment into tissues and metastatic dissemination of tumor cells.

The phenotype of BALB/c-ICOS^{-/-} mice is described here. Mice homozygous for the ICOS⁻ targeted mutation are viable, fertile and normal in size. This ICOS⁻ targeted mutation has the immunoglobulin (Ig)-V-like exon of the *Icos* gene replaced by a reverse-oriented neomycin resistance cassette. This mutation abolishes ICOS function; anti-CD3 activated splenocytes from homozygous mice show no ICOS expression or ICOS-ligand binding. Homozygous mice exhibit defective humoral immunity (impaired Ig class-switching and germinal center reactions). Homozygous mice fail to develop allergen-induced airway hyperreactivity (AHR; a cardinal feature of asthma that requires the presence of *i*NKT cells). BALB/c-ICOS^{-/-} mice have reduced number of peripheral *i*NKT cells, with *i*NKT cells producing substantially lower levels of IL-4, IL-5, IFN- γ , IL-13, and IL-10 (but similar levels of IL-2) compared to BALB/c wildtype mice. While ICOS^{-/-} mice on different inbred backgrounds demonstrate enhanced susceptibility to experimental autoimmune encephalomyelitis (EAE), the EAE phenotype of BALB/c-ICOS^{-/-} mice is not yet characterized (April 2013).

Development

Control Suggestions

Selected References

Genetics

Icos^{tm1Shr}

⊖ 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

Separated PCR:[Icosalternate2](#)

[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 C.129S4-*Icos*^{tm1Shr}/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #017605 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

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Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

Cryorecovery - Domestic Pricing

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Heterozygous for Icos<tm1Shr>	\$2,854.50

Related Products and Services

Frozen Mouse Embryo	C.129S4-Icos<tm1Shr>/J	\$2595.00
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