Overview

Also Known As: HLA-A2

Homzygous mice carrying the Tg(HLA-A2.1)1Enge transgene express significant quantities of the human class I MHC Ag HLA-A2.1 on cells from the spleen, bone marrow and thymus. These transgenic mice have been used to identify hepatitis C virus (HCV) peptides expressing a sequence for HLA-A2.1 binding that are actually recognized by human A2.1-restricted CTLs. Thus, this transgenic model is important for the study of HLA-restricted CTL determinants and in potential development of a vaccine against HCV.

Donating Investigator

Dr. Victor H. Engelhard, University of Virginia

GENETIC OVERVIEW

Genetic Background

Mcp1 Tg(HLA-A2.1)1Enge

Allele Type

Transgenic (Null/Knockout, Inserted expressed sequence, Humanized sequence)
RESEARCH APPLICATIONS
Immunology, Inflammation and Autoimmunity Research

BASE PRICE
Starting at:
$139.38 Domestic price for female 3-week

Details

Detailed Description
Homozygous mice carrying the Tg(HLA-A2.1)1Enge transgene express significant quantities of the human class I MHC Ag HLA-A2.1 on cells from the spleen, bone marrow and thymus. The transgene integrated into chromosome 8 causing a duplication in Mcph1 (microcephaly, primary autosomal recessive 1). The duplication results in a functional knock-out of Mcph1 in homozygous mice. Expression of this human class I molecule did not result in expansion of the number of cytotoxic T lymphocyte (CTL) precursors specific for other human class I Ag, HLA-B27 or HLA-A2.2. These transgenic mice have been used to identify hepatic C virus (HCV) peptides expressing a sequence for HLA-A2.1 binding that are actually recognized by human A2.1-restricted CTLs. Thus, this transgenic model is important for the study of HLA-restricted CTL determinants and in potential development of a vaccine against HCV.

In 2018, protein expression was verified by flow cytometry in male and female splenocytes using an anti-HLA-A2 antibody (Clone CR11-351).

Development

Expression Data

Control Suggestions

Selected References
Genetics

Mcp1^{Tg(HLA-A2.1)1Enge}

Disease/Phenotype

Disease Terms

Research Areas By Phenotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

Genotyping Protocols
QPCR: Tg(HLA-A)-2
QPCR: Tg(HLA-A)-2
Standard PCR: Tg(HLA-A2.1)1Enge
Genotyping resources and troubleshooting

Breeding Considerations

This strain is a good breeder.

Additional Breeding and Husbandry Support
Mating System
Homozygote x Homozygote
Appearance
black
Related Genotype: a/a

Citation

When using the HLA-A2 mouse strain in a publication, please cite the originating article(s) and include JAX stock #003475 in your Materials and Methods section.

Animal Health Reports
Facility Barrier Level Descriptions
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