

B6.Cg-Tg(Gja5-GCaMP2)1Mik/J

Stock No: **025404** | CHROMus line Cx40^{BAC}-GCaMP2

◆ Congenic, Transgenic

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

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arterial endothelial cells, atrial myocytes and cardiac Purkinje fibers. Upon GCaMP2 binding to calcium, increased EGFP fluorescence is observed.

Donating Investigator

Michael I Kotlikoff, Cornell University

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GENETIC OVERVIEW

Genetic Background

Generation

Tg(Gja5-GCaMP2)1Mik

Allele Type

Transgenic (Reporter)

VIEW GENETICS

RESEARCH APPLICATIONS

Cardiovascular Research

Research Tools

Cell Biology Research

Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

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

Cx40^{BAC}-GCaMP2 transgenic mice express the fluorescent calcium indicator GCaMP2 under control of the *Gja5* locus (connexin40 or Cx40) promoter/enhancer regions within the BAC transgene. Cx40^{BAC}-GCaMP2 transgenic mice from founder line 1 exhibit high sensor expression (GCaMP2 expression/EGFP fluorescence) in arterial endothelial cells, atrial myocytes and cardiac Purkinje fibers. Expression is also observed in endothelium of arteries, arterioles and/or capillaries of various non-cardiac tissues (including lung, liver, aorta and skeletal muscle). No expression is reported in ventricular myocardium or venous endothelial cells (lung or skeletal muscle). In total, transgene expression is consistent with endogenous Cx40. In the absence of calcium binding, low/baseline EGFP fluorescence is observed. Following calcium binding (such as arteriolar vasodilation), bright EGFP fluorescence is observed.

Hemizygous and homozygous mice are viable and fertile with no reported gross physical or behavioral abnormalities. The donating investigator reports that homozygotes have brighter fluorescence than hemizygotes.

Calcium is a key molecular signal for cell functions including heart, vessel, and airway contraction, lung secretion, autonomic neurotransmission and immunocyte function. Cx40^{BAC}-GCaMP2 transgenic mice may be useful to examine calcium signaling in endothelium-dependent vasodilation both *in vivo* and *in vitro*.

The genetically encoded calcium indicator GCaMP2 is a calcium-sensing molecule composed of a chicken smooth muscle M13 fragment of myosin light chain kinase, a circularly permuted EGFP (with several amino acid substitutions designed to increase brightness, dynamic range and thermal stability, as well as to prevent GFP dimerization), and a rat calmodulin sequence. In the absence of calcium binding, dim EGFP fluorescence is expected as there is a pore from the outside of its barrel into the chromophore. Upon calcium binding, this pore becomes occupied and fluorescence is increased.

This mouse model is available by way of a collaborative effort between Cornell/National Heart Lung Blood Resource for Optogenetic Mouse Signaling (CHROMus) and The Jackson Laboratory.

Development

Expression Data

Control Suggestions

Selected References

Genetics

[+ Tg\(Gja5-GCaMP2\)1Mik](#)

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: [Tg\(RP24-255O4-GCaMP2\)1Mik](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, hemizygous mice may be bred to wildtype (noncarrier) mice from the colony or to C57BL/6J inbred mice (Stock No. [000664](#)). Alternatively, homozygous mice may be bred together.

[Additional Breeding and Husbandry Support](#)

Citation

When using the CHROMus line Cx40^{BAC}-GCaMP2 mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #025404 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

Pricing effective for USA, Canada and Mexico shipping destinations

CRYORECOVERY - DOMESTIC PRICING

SERVICE/PRODUCT	DESCRIPTION	PRICE
Cryo Recovery	Hemizygous or Non Carrier for Tg(RP24-255O4-GCaMP2)1Mik	\$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	B6.Cg-Tg(RP24-255O4-GCaMP2)1Mik/J Frozen Embryo	\$2595.00
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Q U E S T I O N S A B O U T T E R M S O F U S E

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LICENSING INFORMATION

Phone: 207-288-6470

Email: TechTran@jax.org

Related Strains

All

By Allele

By Gene

By Collection



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