

STOCK *Igs3*^{tm2.1(ACTB-EGFP*,-tdTomato)Luo} /J

Stock No: 017923 | Miya10^{GT} (M10^{GT})

Targeted Mutation

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

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"MADM GT" cassette, all inserted into an intergenic region on chromosome 10 (~21 Mbp; between the *Ahi1* and *Myb* loci). These mutant mice are designed for MADM-10 (mosaic analysis with double markers on chromosome 10), and provide a tool to generate genetic mosaics in which an individual organism contains somatic cells of different genotypes. This allows Cre recombinase-induced fluorescent labeling of daughter cells to ascertain lineal relationships and pleiotropic gene function in multicellular organisms. These mice may also be useful in studies of cell differentiation and mitosis.

Donating Investigator

Liqun Luo, Stanford University

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GENETIC OVERVIEW

Genetic Background

Generation

Igs3^{tm2.1(ACTB-EGFP*,-tdTomato)Luo}

Alele Type

Gene Symbol

Gene Name

Targeted (Reporter, Null/Knockout)

Igs3

intergenic site 3

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools

Neurobiology Research

Cell Biology 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

The $Miya10^{GT}$ ($M10^{GT}$) transgene has the CMV enhancer/chicken beta-actin core promoter upstream of a *flr*-flanked "MADM GT" cassette, all inserted into an intergenic region on chromosome 10 (~21 Mbp; between the *Ahi1* and *Myb* loci). The "MADM GT" cassette has the N-terminal portion of mut4EGFP, a beta-globin intronic sequence, and a MYC-tagged tdTomato gene lacking an ATG start site (tdT3Myc^{ATG-less}). Homozygous $M10^{GT}$ mice are viable and fertile with no gross behavioral or observable abnormalities. Homozygous mice exhibit no fluorescent protein expression in absence of its reciprocal mutation (even if Cre recombinase is present).

These mutant mice are designed for MADM-10 (mosaic analysis with double markers on chromosome 10), and must be crossed to mice harboring a reciprocal transgene at the same locus ($M10^{IG}$ mice; Stock No. [017932](#)) to allow Cre recombinase-induced fluorescent labeling of cells. [A detailed description and figure of this MADM-10 principle is available here.](#)

Other important features of the MADM-10 system are listed below. Because of its placement ~21kb from the centromere, MADM-10 allows genes in the distal ~108 Mbp of chromosome 10 to be subjected to MADM-based mosaic analyses. MADM-10 allows direct fluorescent visualization of both mut4EGFP and tdTomato-3Myc in live animals/cells: permitting genotypes of distinctly labeled cells in mosaic animals to be unequivocally determined prior to fixation and/or immunostaining. There are some limitations to MADM-10 as well. The labeling efficiency of MADM-10 is qualitatively lower than other MADM systems (such as MADM-6 and MADM-11). Moreover, the *Miya10* locus is not bi-allelically expressed in some organs (e.g., liver), while it appears to be bi-allelically expressed in others (heart and cerebellum). As MADM-based mosaic analysis critically depends on bi-allelic expression of two cassettes in the cells of interest, the donating investigator reports that MADM-10 can be used in heart and the cerebellum, but bi-allelic marker expression should be tested before application of the MADM-10 system to other cell populations.

Development

Expression Data

Genetics

+ [Igs3^{tm2.1\(ACTB-EGFP*, -tdTomato\)}Luo](#)

– 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 MCA: [Tg\(ACTB-mut4EGFP, -tdTomato\)10Luo MCA](#)

Separated PCR: [Tg\(ACTB-mut4EGFP, -tdTomato\)10Luo](#)

[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 Miya10^{GT} (M10^{GT}) mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #017923 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(ACTB-EGFP*, -tdTomato)10Luo	\$2,854.50

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	STOCK IIS3<tm2.1(ACTB-EGFP*-tdTomato)Luo>/J	\$2595.00
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LICENSING INFORMATION

Phone: 207-288-6470

Email: TechTran@jax.org

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