

## C57BL/6J-Tg(CAG-ARL13B/mCherry/GECO1.2)1Clph/J

Stock No: **030613** | *hArl13b-mCherry-GECO1.2*<sup>tg</sup>

Coisogenic, Transgenic

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

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*Arl13b-mCherry-GECO1.2*<sup>tg</sup> transgenic mice express a ratiometric calcium indicator in all primary cilia that is useful for *in vivo/in vitro* assessment of Ca<sup>2+</sup> signaling.

### Donating Investigator

David Clapham, Janelia Research Campus, Howard Hughes Medical Institute

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## GENETIC OVERVIEW

Genetic Background

Generation

### Tg(CAG-ARL13B/mCherry/GECO1.2)1Clph

#### Alele Type

Transgenic (Reporter, Humanized sequence)

VIEW GENETICS

## RESEARCH APPLICATIONS

Research Tools

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

*Arl13b-mCherry-GECO1.2<sup>tg</sup>* transgenic mice express a ratiometric calcium indicator in all primary cilia that is useful for *in vivo/in vitro* assessment of  $\text{Ca}^{2+}$  signaling. Evaluation of the GECO1.2 (green) and mCherry (red) fluorescence ratio ( $F_{\text{GECO1.2}}/F_{\text{mCherry}}$ ) reduces movement-related artifacts.

Expression of the transgene is found in all primary cilia of the inner ear sensory epithelium, including kinocilia of both inner hair cells and outer hair cells of the organ of Corti. Scanning electron microscopy between embryonic day 18 (E18) and postnatal day 3 (P3) has confirmed normal development of stereocilia bundles in transgenic animals.

Deflection of the stereocilia bundle results in a rapid and robust increase in  $F_{\text{GECO1.2}}$  within the bundle, while  $F_{\text{mCherry}}$  remains largely unchanged. Inner hair cell bundle deflection increases the ratio approximately 3-fold, with recovery to the resting value within 2.5s after the application of laminar flow. The slow dissociation rate of  $\text{Ca}^{2+}$  from GECO1.2 ( $\tau$  approximately 600 ms) provides a valuable means of distinguishing true changes in  $\text{Ca}^{2+}$  concentration from movement-related artifacts. In contrast, kinocilia deflected by pressure steps over a range of developmental stages (E14 to P3) exhibit no detectable increase in ciliary  $\text{Ca}^{2+}$  concentration.

This model has also been used to measure cilia bending in cultured medullary collecting duct cells of the kidney, and primary cilia of the embryonic node during development.

Homozygous mice are viable and fertile, and show no organ morphology/orientation defects that would suggest cilia defects. Heterotaxy has not been observed. Breeding animals are reported to show normal litter sizes (6-8 pups on C57BL/6 background).

#### Development

#### Expression Data

#### Control Suggestions

#### Selected References

### Genetics

[+ Tg\(CAG-ARL13B/mCherry/GECO1.2\)1Clph](#)

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## [- Disease/Phenotype](#)

[+ Disease Terms](#)

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[+ Research Areas By Phenotype](#)

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[+ Mammalian Phenotype Terms by Genotype](#)

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[+ References](#)

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## [- 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: [Tg\(CAG-ARL13B/mCherry/GECO1.2\)1Clph](#)  
[Genotyping resources and troubleshooting](#)

### Breeding Considerations

Hemizygotes and homozygotes are viable and fertile.

### [Additional Breeding and Husbandry Support](#)

#### Mating System

Homozygote x Homozygote

#### Citation

When using the *hAr13b-mCherry-GECO1.2<sup>tg</sup>* mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #030613 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](#)*

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## [- Pricing & Availability](#)



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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(CAG-ARL13B/mCherry/GECO1.2)1Clph	\$2,854.50

### RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo	C57BL/6J-Tg(CAG-ARL13B/mCherry/GECO1.2)1Clph/J Frozen Embryo	\$2595.00
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