



B 6 . C g - T g (T h y 1 - C O P 4 / E Y F P) 9 G f n g / J

Stock No: 007615 | Thy1-ChR2-YFP

Congenic, Transgenic



AVAILABLE

P L A C E O R D E R

Live mice available in varying quantities. Ask Customer Service for details.

Overview

Also Known As: Thy1-ChR2-YFP

Tg(Thy1-COP4/EYFP)9Gfng (or Thy1-ChR2-YFP) transgenic mice may be useful in optogenetic studies for rapid control of motor behavior by addition or removal of light, for *ex vivo* and *in vivo* studies of neural circuitry/connectivity following illumination, and for fluorescent labeling of *Thy1*-expressing cells throughout the brain (including cortex, hippocampus, thalamus, midbrain, brainstem, cerebellar mossy fibers and retinal ganglion cells).

Donating Investigator

READ MORE +

GENETIC OVERVIEW

Genetic Background

Generation

N6+N6F6

(2019-05-17 00:00:00)

Tg(Thy1-COP4/EYFP)9Gfng

Allele Type

Transgenic (Reporter)

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools

Neurobiology Research

VIEW ALL RESEARCH APPLICATIONS

BASE PRICE

Starting at:

\$278.00 Domestic price for female 4-week

348.51 Domestic price for breeder pair

VIEW PRICE LIST

Details

Detailed Description

These Thy1-ChR2-YFP founder line 9 transgenic mice express the light-activated ion channel, Channelrhodopsin-2 (from the green alga *Chlamydomonas reinhardtii*), fused to Yellow Fluorescent Protein (ChR2-YFP) under the control of the mouse thymus cell antigen 1 (*Thy1*) promoter. Hemizygotes are viable, fertile, normal in size and do not display any gross physical or behavioral abnormalities. Expression of the transgenic ChR2-YFP fusion protein is detected throughout the brain, including in the cortex, hippocampus, thalamus, midbrain, brainstem, cerebellar mossy fibers and retinal ganglion cells. Neurons expressing the transgene are morphologically and physiologically comparable to non-mutant neurons. This mutant mouse strain may be useful for *ex vivo* and *in vivo* neural circuitry mapping studies using light stimulation.

The ChR2-YFP fusion protein is composed of a *Chlamydomonas reinhardtii*-derived channelrhodopsin-2 (ChR2) fused in-frame

with an enhanced yellow fluorescent protein (EYFP).

The bacterial opsins are retinal-binding proteins that combine a light-sensitive domain with an ion channel or pump; providing light-dependent ion transport, membrane potential alteration, and sensory functions to bacteria. ChR2 functions as a blue light-driven cation channel that depolarizes the cell and causes action potentials. As such, illuminating ChR2-expressing neurons with blue light (~470 nm) leads to rapid and reversible photostimulation of action potential firing/neural activity in these cells.

This optogenetic strain is one of many from the same transgene creator/donating investigator with light-inducible neurobiology applications; including

Thy1-ChR2-YFP line 18 (Stock No. [007612](#)),
Thy1-eNpHR-YFP line 2 (Stock No. [012332](#)),
Thy1-eNpHR-YFP line 4 (Stock No. [012334](#)),
Thy1-vChR1-YFP line 1 (Stock No. [012341](#)),
Thy1-vChR1-YFP line 4 (Stock No. [012344](#)),
Thy1-vChR1-YFP line 8 (Stock No. [012348](#)),
Thy1-mhChR2-YFP Line 20 (Stock No. [012350](#)),
Prv-mhChR2-YFP Line 15 (Stock No. [012355](#)),
ChAT-ChR2-YFP line 5 (Stock No. [014545](#)),
ChAT-ChR2-YFP line 6 (Stock No. [014546](#)),
VGAT-ChR2-YFP line 8 (Stock No. [014548](#)),
and TpH2-ChR2-YFP line 5 (Stock No. [014555](#)).

[View YFP fluorescence in sagittal brain sections for this strain.](#)

[+ Development](#)

[+ Expression Data](#)

[+ Control Suggestions](#)

[+ Selected References](#)

[- Genetics](#)

[+ Tg\(Thy1-COP4/EYFP\)9Gfng](#)

[- Disease/Phenotype](#)

[+ Disease Terms](#)

[+ Research Areas By Genotype](#)

[+ Mammalian Phenotype Terms by Genotype](#)

[+ References](#)

[- Technical Support](#)

Genotyping Protocols

Probe: [Generic GFP](#)

Standard PCR: [Generic GFP](#)

[Genotyping resources and troubleshooting](#)

Dietary Information

LabDiet® 5K52 formulation (6% fat)

Breeding Considerations

When maintaining a live colony, these mice are bred as hemizygotes. The Donating Investigator has not attempted to make the strain homozygous.

[Additional Breeding and Husbandry Support](#)

Mating System

Noncarrier x Hemizygote

Citation

When using the Thy1-COP4-YFP mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #007615 in your Materials and Methods section.

[Facility Barrier Level Descriptions](#)

 AX10 (Standard)

🔴 Pricing & Availability



Live mice available in varying quantities. Ask Customer Service for details.

Available

Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

Live Mouse

AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
4 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
5 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
5 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
6 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
6 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51

7 weeks	SEX	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
7 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
8 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
8 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
9 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
9 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
10 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
10 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
11 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
11 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51
12 weeks	Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
	Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$278.00
12 weeks	Female	Noncarrier	\$78.51
	Male	Noncarrier	\$78.51

Breeder Pair		
SEX	GENOTYPE	PRICE
Female	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	\$348.51
Male	Noncarrier	
Female	Noncarrier	\$348.51
Male	Hemizygous for Tg(Thy1-COP4/EYFP)9Gfng	

Related Products and Services		
Frozen Mouse Embryo	B6.Cg-Tg(Thy1-COP4/EYFP)9Gfng/J	\$2595.00

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