

B6J.Cg-Gt(ROSA)26Sor^{tm96(CAG-GCaMP6s)Hze}/MwarJ

Stock No: **028866** | Ai96(RCL-GCaMP6s) (C57BL/6J) or Ai96 (C57BL/6J)

 Congenic, Targeted Mutation

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detector of single neuronal action potentials with slower decay and response kinetics). After Cre exposure, increased EGFP fluorescence is observed following calcium binding (such as neuronal activation).

Donating Investigator

Hongkui Zeng, Allen Institute for Brain Science

Melissa R Warden, Cornell University

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GENETIC OVERVIEW

Genetic Background

Generation

N7+pN2F4
(2019-03-01 00:00:00)

Gt(ROSA)26Sor^{tm96(CAG-GCaMP6s)Hze}

Alele Type

Targeted (Conditional ready (e.g. floxed), Reporter, Inserted expressed sequence)

Gene Symbol

Gt(ROSA)26Sor

Gene Name

gene trap ROSA 26, Philippe Soriano

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools

Neurobiology Research

BASE PRICE

Starting at:

\$236.78 Domestic price for female 4-week

315.29 Domestic price for breeder pair

VIEW PRICE LIST

Details

Detailed Description

Stock No. 028866 is the C57BL/6J-congenic Ai96 mouse line (Ai96 (C57BL/6J)). In an attempt to offer alleles on well-characterized or multiple genetic backgrounds, alleles are frequently moved to a genetic background different from that on which an allele was first characterized. The phenotype described below is for Ai96 mice on a mixed genetic background (Stock No. 024106). It should be noted that the phenotype of the C57BL/6J-congenic line could vary from that originally described for mice on other genetic backgrounds. We will modify the strain description if necessary as published results become available.

Ai96(RCL-GCaMP6s) mice (also called Ai96) harbor the Rosa-CAG-LSL-GCaMP6s conditional allele, designed with a floxed-STOP cassette upstream of the GCaMP6 slow variant calcium indicator (GCaMP6s; see detailed description below). Although under control of the endogenous *Gt(ROSA)26Sor* promoter/enhancer regions and the CAG hybrid promoter, widespread expression of GCaMP6s is prevented by STOP cassettes. After exposure to Cre recombinase, EGFP fluorescence is observed following calcium binding (such as neuronal activation).

Specifically, the donating investigator reports Ai96 mice have no reported levels of EGFP fluorescence prior to exposure to Cre recombinase. When Ai96 mice are bred with a Cre-driver line to create double transgenic animals (GCaMP6s+/Cre+), cells expressing Cre exhibit low EGFP fluorescence in the absence of calcium binding. Following calcium binding (such as neuronal activation), increased EGFP fluorescence is observed in these cells.

The donating investigator also reports that following neuronal activation, the fluorescent intensity observed in double transgenic Ai96 mice (GCaMP6s+/Cre+) is less than that of the double transgenic Ai95 system using GCaMP6 fast variant calcium indicator (GCaMP6f+/Cre+; see Stock No. 024105). Although both systems utilize Cre-dependent GCaMP6/EGFP fusion genes, they differ in the kinetics and sensitivity of their GCaMP6 variants.

Heterozygous Ai96 mice are viable and fertile with no reported gross physical or behavioral abnormalities. The donating investigator has not attempted to generate homozygous Ai96 mice to date (March 2014).

For characterization information of the Ai96 allele, see images at the Allen Institute for Brain Science website ([Ai96\(RCL-GCaMP6s\) images](#)).

The GCaMP6 slow variant calcium indicator (GCaMP6s) is an ultrasensitive detector of single neuronal action potentials with slower decay and response kinetics ([Chen et al. 2013 Nature 499:295](#)), and is an improved version of GCaMP5G. The GCaMP6s fusion gene was designed by Drs. Douglas Kim and Loren Looger (Janelia Farm, HHMI). Compared to GCaMP6f, the slower kinetics render GCaMP6s more sensitive and slower to decay. GCaMP6s has a chicken smooth muscle M13 fragment of myosin light chain kinase, a circularly permuted EGFP (with several amino acid substitutions designed to optimize dynamic range, baseline fluorescence and sensitivity), and a rat calmodulin sequence modified to increase the fluorescence change for small calcium transients. Other modifications in the cpEGFP-to-CaM linker also improve sensor function. 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.

[+ Development](#)

[+ Expression Data](#)

[+ Control Suggestions](#)

[+ Selected References](#)

[- Genetics](#)

[+ *Gt\(ROSA\)26Sor^{tm96\(CAG-GCaMP6s\)Hze}*](#)

[- 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:[Gt\(ROSA\)26Sor](#)
[Genotyping resources and troubleshooting](#)
Dietary Information
LabDiet® 5K52 formulation (6% fat)

Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred to wildtype mice from the colony or to C57BL/6J inbred mice (Stock No. [000664](#)). The donating investigator has not attempted to generate homozygous mice to date (March 2016).

Additional Breeding and Husbandry Support

Citation

When using the Ai96(RCL-GCaMP6s) (C57BL/6J) or Ai96 (C57BL/6J) mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #028866 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX12 \(Maximum\)](#)

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Live Mouse			
AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
4 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
5 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
5 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
6 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
6 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51
7 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$236.78
7 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)} Hze	\$78.51

	SEX	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	PRICE
8 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
8 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
9 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
9 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
10 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
10 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
11 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
11 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
12 weeks	Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
	Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$236.78
12 weeks	Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51
	Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}	\$78.51

Breeder Pair			PRICE
SEX	GENOTYPE		
Female	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}		\$315.29
Male	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}		
Female	Wild-type for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}		\$315.29
Male	Heterozygous for Gt(ROSA)26Sor ^{tm96(CAG-GCaMP6s)Hze}		

Related Products and Services		
Frozen Mouse Embryo	B6J.Cg-Gt(ROSA)26Sor<tm96(CAG-GCaMP6s)Hze>/MwarJ	\$2595.00

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