

B6N; 129-Gt(ROSA)26Sor^{tm2(CAG-mGCaMP3)Dbe} /J

Stock No: **030170** | Rosa26-lsl-mGCaMP3

 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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fluorescence is observed.

Donating Investigator

Dwight E Bergles, Johns Hopkins School of Medicine

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GENETIC OVERVIEW

Genetic Background Generation

Gt(ROSA)26Sor^{tm2(CAG-mGCaMP3)Dbe}

Alele Type	Gene Symbol	Gene Name
Targeted (Conditional ready (e.g. floxed), Reporter)	<i>Gt(ROSA)26Sor</i>	gene trap ROSA 26, Philippe Soriano

VIEW GENETICS

RESEARCH APPLICATIONS

Neurobiology Research

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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

Mice heterozygous for the Rosa26-lsl-mGCaMP3 conditional allele have a *loxP*-flanked STOP cassette that prevents transcription of the downstream membrane-associated mGCaMP3 fusion gene. The donating investigator reports that the presence of the neomycin resistance cassette does not have any adverse effects on the expression of GCaMP3 or the health and survival of these mice. Because the CAG promoter driven reporter construct was targeted for insertion into the *Gt(ROSA)26Sor* locus, GCaMP3 expression is determined by which tissue(s) express Cre recombinase. When bred to mice that express Cre recombinase, the resulting offspring will have the STOP cassette deleted in the *cre*-expressing tissues; resulting in expression of the fluorescent calcium indicator protein, mGCaMP3. The donating investigator reports that mice do not express mGCaMP3 prior to introduction of Cre recombinase. Following exposure to Cre recombinase, mGCaMP3 expression (EGFP fluorescence) is detected on the cell membrane of cells in *cre*-expressing tissues. Following calcium binding (such as neuronal activation) bright EGFP fluorescence is observed.

GCaMP3 is a fluorescent calcium indicator. The GCaMP3 fusion gene contains the chicken smooth muscle M13 fragment of myosin light chain kinase (*MYLK*), a circularly permuted EGFP sequence (with several amino acid substitutions designed to increase dynamic range and baseline fluorescence), and a rat calmodulin (*Calm*) sequence modified to increase the fluorescence change for small calcium transients. 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. To localize GCaMP3 to the plasma membrane, a gene sequence encoding the first 8 amino acids of the modified *Marcks* (myristoylated alanine rich protein kinase C substrate) sequence (MGCCFSKT) was fused to the transcription initiation codon.

When bred to STOCK Tg(Slc1a3-cre/ERT)1Nat/J mice (Stock No. [012586](#)), expressing tamoxifen-inducible Cre Recombinase in astrocytes of the brain, resulting mice express GCaMP3 in cortical astrocyte microdomains following tamoxifen administration. *In vivo* two-photon imaging was used to define the activity patterns of cortical and cerebellar astrocytes during increased spontaneous Ca²⁺ release as seen in CNS injury and Alzheimer's disease.

+ Development

+ Expression Data

+ Control Suggestions

+ Selected References

Genetics

– 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 PCR: [Gt\(ROSA\)26Sor<\(GCaMP-WPRE\)>](#)

Probe: [Generic Neo](#)

Standard PCR: [Gt\(ROSA\)26Sor<\(CAG-Neo\)>](#)

Standard PCR: [Gt\(ROSA\)26Sor<\(CAG-Neo\)> Alternate2](#)

[Genotyping resources and troubleshooting](#)

Breeding Considerations

When maintaining a live colony, homozygous mice may be bred together.

[Additional Breeding and Husbandry Support](#)

Mating System

Heterozygote x Heterozygote

Citation

When using the Rosa26-*Isl*-mGCaMP3 mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #030170 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	Heterozygous or wildtype for Gt(ROSA)26Sor<tm2(CAG-mGCaMP3)Dbe>	\$2,854.50

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