

B6;129S6-Gt(ROSA)26Sor^{tm9(CAG-mCherry,-CHRM4*)Dym}/J

Stock No: **029040** | RC::FPDi dual-recombinase responsive fluorescent/DREADD

 Targeted Mutation

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

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transcription of an hM4-tagged hM4Di - a mutant G-protein-coupled DREADD receptor that induces the canonical G_{i/o} pathway specifically following administration of its pharmacologically inert ligand (CNO). FLP recombinase results in mCherry fluorescence, and further exposure to Cre recombinase results in hM4Di expression in the overlapping populations. The RC::FPDi allele and its derivatives allow conditional intersectional genetics for chemogenetic studies to express an inhibitory DREADD that effectively induces membrane hyperpolarization and neuronal silencing.

Donating Investigator

Susan M Dymecki, Harvard Medical School

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GENETIC OVERVIEW

Genetic Background

Generation

?+pN1F8
(2019-12-17 00:00:00)

Gt(ROSA)26Sor^{tm9(CAG-mCherry,-CHRM4)Dym}*

Allele Type

Targeted (Conditional ready (e.g. floxed), Reporter)

Gene Symbol

Gt(ROSA)26Sor

Gene Name

gene trap ROSA 26, Philippe Soriano

VIEW GENETICS

RESEARCH APPLICATIONS

Research Tools
Neurobiology Research
Cancer Research

BASE PRICE

Starting at:

\$278.00 Domestic price for female 4-week

VIEW PRICE LIST

Details

Detailed Description

The RC::FPDi dual-recombinase responsive indicator allele is a *Gt(ROSA)26Sor* knock-in with the CAG hybrid promoter followed by a *frt*-flanked STOP and *loxP*-flanked mCherry::STOP that prevent transcription of a hemagglutinin epitope-tagged hM4Di sequence. FLP recombinase-mediated removal of the *frt*-flanked STOP cassette results in expression of mCherry. Further exposure to Cre recombinase removes the floxed-mCherry::STOP, resulting in expression of the HA-tagged hM4Di - a mutant G_{i/o}-coupled human M4 muscarinic receptor DREADD modified to lack affinity for its native ligand acetylcholine (ACh), but allow receptor binding and subsequent activation by the small drug-like molecule clozapine-*N*-oxide (CNO). hM4Di activation via CNO binding induces the canonical G_i pathway; leading to membrane hyperpolarization and neuronal silencing.

Specifically, the donating investigator reports that RC::FPDi mice have no mCherry expression prior to introduction of FLP recombinase, and no detectable hM4Di expression prior to introduction of both FLP and Cre recombinases. Following FLP recombinase, mCherry expression is observable by immunofluorescence and by direct fluorescence (if expression level is great enough). Subsequent Cre recombinase exposure results in expression of the HA-tagged hM4Di (far-red indirect HA immunofluorescence) which is capable of CNO ligand-inducible and reversible suppression of action potential firing. Mice homozygous for the RC::FPDi allele are viable and fertile with no reported gross physical or behavioral abnormalities.

FLP- and/or *cre*-mediated removal of specific STOP cassettes within the RC::FPDi allele results in the following derivative alleles:

- i. *FLP*-mediated recombination results in the single-recombinase responsive indicator allele RC::PDi, which has constitutive mCherry fluorescence and allows *cre*-inducible expression of the CNO-dependent hM4Di.
- ii. *cre*-mediated recombination results in the single-recombinase responsive indicator allele RC::FDi, which has no fluorescence (mCherry::STOP sequences removed) and allows *FRT*-inducible expression of the CNO-dependent hM4Di.
- iii. Combination of *FLP*- and *cre*-mediated recombination results in deletion of both STOPs; allowing CNO-inducible hM4Di expression in the cells/tissues where *FLP* and *cre* expression overlap.

Development

Expression Data

Control Suggestions

[+ Selected References](#)

[- Genetics](#)

[+ *Gt\(ROSA\)26Sor^{tm9\(CAG-mCherry,-CHRM4*\)Dym}*](#)

[- 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 Alternate1](#)
[Genotyping resources and troubleshooting](#)

Breeding Considerations

Mice homozygous for the RC::FPDi allele are viable and fertile with no reported gross physical or behavioral abnormalities. When maintaining a live colony, heterozygous mice may be bred together, to wildtype mice from the colony or to C57BL/6J inbred animals (Stock No. [000664](#)). Alternatively, homozygous mice may be bred together.

[Additional Breeding and Husbandry Support](#)

Mating System

Homozygote x Homozygote

Citation

When using the RC::FPDi dual-recombinase responsive fluorescent/DREADD mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #029040 in your Materials and Methods section.

Animal Health Reports

[Facility Barrier Level Descriptions](#)

 [AX9 \(Standard\)](#)

🔍 Pricing & Availability



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Available

Domestic **International**

Pricing effective for USA, Canada and Mexico shipping destinations

LIVE MOUSE			
AGE	SEX	GENOTYPE	PRICE
4 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
5 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
6 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
7 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
8 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
9 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
10 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
11 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
12 weeks	Female	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00
	Male	Homozygous for Gt(ROSA)26Sor ^{tm9(CAG-mCherry-CRM4*)Dym}	\$278.00

RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo B6;129S6-Gt(ROSA)26Sor<tm9(CAG-mCherry -CHRM4*)Dym>/J Frozen \$2595.00

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