When these Camk2a-tTA transgenic mice are mated to strain carrying a gene of interest under the regulatory control of a tetracycline-responsive promoter element (TRE; tetO), expression of the target gene can be blocked by administration of the tetracycline analog, doxycycline. These mice are a "Tet-Off" tool that allow the inducible expression of genes in forebrain neurons, and may be useful in studying brain disorders such as Alzheimer's, Parkinson's disease, or other neurodegenerative diseases.

As described for Stock No. 007004, the CaMK2a-tTA transgene integrated into chromosome 12 causing a 508 Kb deletion that spans the 3' half of Vipr2, the entire Wdr60, Esyt2, D430020J02Rik and Ncapg2 loci and the first two exons of Ptprn2. Homozygous mice will therefore have a functional knock-out of the deleted loci, and altered or null expression of Vipr2 and Ptprn2. Founder line 1 has >20 transgene copies [Goodwin et al. 2019 Genome Res. 29:494].

Donating Investigator
Dr. Mark Mayford, The Scripps Research Institute
CaMK2a-tTA transgenic mice express the tetracycline-controlled transactivator protein (tTA) under regulatory control of the forebrain-specific calcium-calmodulin-dependent kinase II (Camk2a) promoter.

As described for Stock No. 007004, the CaMK2a-tTA transgene integrated into chromosome 12 causing a 508.12 Kb deletion that spans the 3' half of Vipr2 (vasoactive intestinal peptide receptor 2), the entire Wdr60 (WD repeat domain 60), Esyt2 (extended synaptotagmin-like protein 2), D430020J02Rik (RIKEN cDNA D430020J02 gene) and Ncapg2 (non-SMC condensin II complex, subunit G2) loci and the first two exons of Ptprn2 (protein tyrosine phosphatase, receptor type, N polypeptide 2). Homozygous mice will therefore have a functional knock-out of the deleted loci (Wdr60, Esyt2, D430020J02Rik, Ncapg2), and altered or null expression of Vipr2 and Ptprn2. Founder line 1 has a copy number of greater than 20 [Goodwin et al. 2019 Genome Res. 29:494].

Hemizygous mice are viable and fertile. When hemizygotes are mated to a second strain carrying a gene of interest under the regulatory control of a tetracycline-responsive promoter element (TRE; tetO), expression of the target gene can be blocked by administration of the tetracycline analog, doxycycline (dox). These mice are a "Tet-Off" tool that allow the inducible expression of genes in forebrain neurons, and may be useful in studying brain disorders such as Alzheimer's disease (when used in conjunction with Stock No. 005706, Stock No. 007049, Stock No. 007051, Stock No. 007052), Parkinson's disease (Stock No. 013583), or other neurodegenerative diseases.

Of note, mice expressing Tg(Camk2a-tTA)1Mmay on the C57BL/6 background exhibit resistance to tTA-induced neurotoxicity (dentate gyrus granule cell layer atrophy). All other backgrounds tested (FVB/NJ, CBA/J, 129X1/SvJ, C3H/HeJ, DBA/1J) exhibit varying levels of neurotoxicity (Han et al. 2012 J Neurosci 32:10574).
Genotyping Protocols
Standard PCR: Tg(Camk2a-tTA)1Mmay
Standard PCR: Tg(tTA)
Genotyping resources and troubleshooting

Breeding Considerations
Expected coat color from breeding is Black, Agouti. When maintained in a live colony, these mice were bred as wildtype sib x hemizygous or reciprocal.

Additional Breeding and Husbandry Support
Mating System
+/+ sibling x Hemizygote
Appearance
agouti
Related Genotype: A/?

black
Related Genotype: a/a

Citation
When using the CaMKII-tTA mouse strain in a publication, please cite the originating article(s) and include JAX stock #003010 in your Materials and Methods section.
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200.

Pricing & Availability

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

<table>
<thead>
<tr>
<th>Service/Product</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cryo Recovery</td>
<td>Hemizygous or Non carrier for Tg(Camk2a-tTA)1Mmay</td>
<td>$2,854.50</td>
</tr>
</tbody>
</table>

Related Products and Services

<table>
<thead>
<tr>
<th>Service/Product</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frozen Mouse Embryo</td>
<td>B6;CBA-Tg(Camk2a-tTA)1Mmay/J Frozen Embryo</td>
<td>$2595.00</td>
</tr>
</tbody>
</table>

Payment Terms and Conditions

Terms are granted by individual review and stated on the customer invoice(s) and account statement. These transactions are payable in U.S. currency within the granted terms. Payment for services, products, shipping containers, and shipping costs that are rendered are expected within the payment terms indicated on the invoice or stated by contract. Invoices and account balances in arrears of stated terms may result in The Jackson Laboratory pursuing collection activities including but not limited to outside agencies and court filings.

The Jackson Laboratory's Genotype Promise

The Jackson Laboratory has rigorous genetic quality control and mutant gene genotyping programs to ensure the genetic background of JAX® Mice strains as well as the genotypes of strains with identified molecular mutations. JAX® Mice strains are only made available to researchers after meeting our standards. However, the phenotype of each strain may not be fully characterized and/or captured in the strain data sheets. Therefore, we cannot guarantee a strain’s phenotype will meet all expectations. To ensure that JAX® Mice will meet the needs of individual research projects or when requesting a strain that is new to your research, we suggest ordering and performing tests on a small number of mice to determine suitability for your particular project. We do not guarantee breeding performance and therefore suggest that investigators order more than one breeding pair to avoid delays in their research.

Terms Of Use

Terms Of Use

General Terms and Conditions
Licensing Information

Phone: 207-288-6470
Email: TechTran@jax.org

JAX® Mice, Products & Services Conditions of Use

"MICE" means mouse strains, their progeny derived by inbreeding or crossbreeding, unmodified derivatives from mouse strains or their progeny supplied by The Jackson Laboratory ("JACKSON"). "PRODUCT(S)" means biological materials supplied by JACKSON, and their derivatives. "SERVICES" means projects conducted by JACKSON for other parties that may include but are not limited to the use of MICE or PRODUCTS. "RECIPIENT" means each recipient of MICE, PRODUCTS, or SERVICES provided by JACKSON including each institution, its employees and other researchers under its control. MICE or PRODUCTS shall not be: (i) used for any purpose other than internal research, (ii) sold or otherwise provided to any third party for any use, or (iii) provided to any agent or other third party to provide breeding or other services. Acceptance of MICE, PRODUCTS or SERVICES from JACKSON shall be deemed as agreement by RECIPIENT to these conditions, and departure from these conditions requires JACKSON's prior written authorization.

No Warranty

MICE, PRODUCTS AND SERVICES ARE PROVIDED "AS IS". JACKSON EXTENDS NO WARRANTIES OF ANY KIND, EITHER EXPRESS, IMPLIED, OR STATUTORY, WITH RESPECT TO MICE, PRODUCTS OR SERVICES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY OF NON-INFRINGEMENT OF ANY PATENT, TRADEMARK, OR OTHER INTELLECTUAL PROPERTY RIGHTS.

Credit for PRODUCTS or SERVICES

In case of dissatisfaction for a valid reason and claimed in writing by a purchaser within ninety (90) days of receipt of, PRODUCTS or SERVICES, JACKSON will, at its option, provide credit or replacement for the PRODUCT received or the SERVICES provided; JACKSON makes no other representations and this shall be the exclusive remedy of the purchaser. Please note specific policy for live mice.

Animal Care and Use for SERVICES

Consistent with the requirement for a written understanding regarding animal care and use, the JACKSON Animal Care and Use Committee will review the animal care and use protocol(s) associated with any SERVICES to be performed at JACKSON, and JACKSON shall have ultimate responsibility and authority for the care of animals while on site or in JACKSON custody.

No Liability

In no event shall JACKSON, its trustees, directors, officers, employees, and affiliates be liable for any causes of action or damages, including any direct, indirect, special, or consequential damages, arising out of the provision of MICE, PRODUCTS, or SERVICES, including economic damage or injury to property and lost profits, and including any damage arising from acts or negligence on the part of JACKSON, its agents or employees. Unless prohibited by law, in purchasing or receiving MICE, PRODUCTS, or SERVICES from JACKSON, purchaser or recipient, or any party claiming by or through them, expressly releases and discharges JACKSON from all such causes of action or damages, and further agrees to defend and indemnify JACKSON from any costs or damages arising out of any third party claims.

MICE, PRODUCTS or SERVICES are to be used in a safe manner and in accordance with all applicable governmental rules and regulations.

The foregoing represents the General Terms and Conditions applicable to JACKSON’s MICE, PRODUCTS or SERVICES. In addition, special terms and conditions of sale of certain MICE, PRODUCTS, or SERVICES may be set forth separately in JACKSON web pages, catalogs, price lists, contracts, and/or other documents, and these special terms and conditions shall also govern the sale of these MICE, PRODUCTS and SERVICES by JACKSON, and by its licensees and distributors.

Acceptance of delivery of MICE, PRODUCTS or SERVICES shall be deemed agreement to these terms and conditions. No purchase order or other document transmitted by purchaser or recipient that may modify the terms and conditions hereof, shall be in any way binding on JACKSON, and instead the terms and conditions set forth herein, including any special terms and conditions set forth separately, shall govern the sale of MICE, PRODUCTS or SERVICES by JACKSON.
### Related Strains

#### All

#### By Allele

#### By Gene

#### By Collection

---

**All Related Strains**

<table>
<thead>
<tr>
<th>Stock No: 007004</th>
<th>CaMKII-tTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B6.Cg-Tg(Camk2a-tTA)1Mmay/DboJ</strong></td>
<td></td>
</tr>
<tr>
<td>Related By:</td>
<td>tTA, Tg(Camk2a-ITA)1Mmay, Camk2a...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stock No: 005359</th>
<th>T29-1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B6.Cg-Tg(Camk2a-cre)T29-1Stl/J</strong></td>
<td></td>
</tr>
<tr>
<td>Related By:</td>
<td>Camk2a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stock No: 024854</th>
<th>Tg4510</th>
</tr>
</thead>
<tbody>
<tr>
<td><em><em>STOCK Tg(Camk2a-tTA)1Mmay Fgf14Tg(tetO-MAPT</em>...</em>*</td>
<td></td>
</tr>
<tr>
<td>Related By:</td>
<td>tTA, Tg(Camk2a-tTA)1Mmay, Camk2a...</td>
</tr>
</tbody>
</table>

---

**JAX HOME**  **CAREERS**  **PRIVACY POLICY**  **TERMS OF USE**  **RESEARCH CENTERS**  **MOUSE GENOME INFORMATICS**  **MOUSE PHENOME DATABASE**

*Leading the search for*