B6.Cg-Tg(Thy1-APP)3Somm/J

Stock No: 030504 | APP23, APP K670N/M671L

- Congenic, Transgenic

Available

PLACE ORDER

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

Overview

Also Known As: APP23, APP K670N/M671L

APP23 transgenic mice have the 6.7 kbp murine Thy1 cassette driving expression of human APP isoform 751, containing the Swedish double mutation (APP751"K670N/M671L") associated with Alzheimer's disease.

Donating Investigator

Derya R Shimshek, Novartis Pharma AG
**GENETIC OVERVIEW**

**Tg(Thy1-APP)3Somm**

**Allele Type**
Transgenic (Inserted expressed sequence, Humanized sequence)

---

**RESEARCH APPLICATIONS**

Neurobiology Research

---

**BASE PRICE**

Starting at:

- $255.00 Domestic price for female 4-week
- $333.51 Domestic price for breeder pair

---

**Details**

**Detailed Description**

Mutations in human amyloid beta precursor protein gene (APP) are linked to familial Alzheimer's disease. Patients carrying the Swedish double mutation K670N/M671L (a mutation immediately adjacent to the -secretase site in APP) exhibit memory loss and diagnostic criteria for Alzheimer's disease.

APP23 transgenic mice have the 6.7 kbp murine Thy1 cassette driving expression of human APP isoform 751 containing the Swedish double mutation (APP<sub>751</sub>*K670N/M671L). This Thy1 promoter directs constitutive transgene expression in postnatal and adult neurons, with weak expression in lung (below detection level) and no expression in thymus. Unless stated otherwise, the phenotype below describes mice hemizygous for the APP23 transgene on the C57BL/6 (Sandoz/Novartis substrain) genetic background.

APP23 transgenic mice were originally identified with ~7-fold greater APP<sub>751</sub>*K670N/M671L expression levels compared to endogenous APP. The donating investigator reports expression levels have been quite stable over 10-15 years. APP23 transgenic mice develop extensive -amyloid pathology. Deposits are first observed at 6-8 months of age. Congophilic plaques increase in size and number with age, occupying up to 25% of the neocortex and hippocampus in 24 month-old mice. Plaques are surrounded by activated microglia, astrocytes and dystrophic neurites containing hyperphosphorylated tau - although neurofibrillary tangles are not observed. Plaque development is faster in females than in males. Neuronal loss has been reported in the CA1 region of the hippocampus. Mice also develop cerebral amyloid angiopathy (CAA), and microhemorrhages occur at later ages.
Deficits in spatial memory are observed (Morris water maze) at three months and become more severe with age. Memory deficits in passive avoidance were observed in 25 month-old mice - but not at younger ages. Age-associated changes in and tau levels in the cerebral spinal fluid (CSF) have been reported. The concentration of 42 in the CSF is relatively stable until 16 months of age and then declines, with a 60% reduction measured by 30 months. The decrease in 40 is less prominent. Total tau in CSF is elevated at 24-26 months of age.

The donating investigator reports that mice homozygous for the APP23 transgene on the C57BL/6 genetic background are viable and fertile but difficult to maintain (breed less efficiently). Homozygotes develop amyloid pathology earlier and faster than hemizygotes. Additionally, the homozygous behavioral phenotype has not yet been characterized (May 2017).

The donating investigator reports introgression onto other C57BL/6 substrain genetic backgrounds may increase the death rate during the first 3-6 months of age.

Genotyping Protocols
High Resolution Melting: Tg(Thy1-APP)3Somm
Genotyping resources and troubleshooting
Dietary Information
New Diet as of April 2014: Lab Diet® 5K0Q

Breeding Considerations
When maintaining a live colony, hemizygous mice may be bred together, to wildtype (noncarrier) mice from the colony or to C57BL/6J inbred mice (Stock No. 000664).

The donating investigator reports that mice homozygous for the APP23 transgene on the C57BL/6 genetic background are viable and fertile but difficult to maintain (breed less efficiently). Homozygotes develop amyloid pathology earlier and faster than hemizygotes. Additionally, the homozygous behavioral phenotype has not yet been characterized (May 2017).

Additional Breeding and Husbandry Support

Mating System
Hemizygote x Noncarrier
Noncarrier x Hemizygote

Citation
When using the APP23 APP/K28QON/M671L mouse strain in a publication, please cite the originating article(s) and include JAX stock #030504 in your Materials and Methods section.

AX18 (Maximum)

🔥 Pricing & Availability

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

Available

<table>
<thead>
<tr>
<th>AGE</th>
<th>SEX</th>
<th>GENOTYPE</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td>4 weeks</td>
<td>Female</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Female</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td>5 weeks</td>
<td>Male</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td>6 weeks</td>
<td>Female</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$255.00</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Female</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Noncarrier</td>
<td>$78.51</td>
</tr>
<tr>
<td>SEX</td>
<td>Breeder Pair</td>
<td>GENOTYPE</td>
<td>PRICE</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Female</td>
<td>Female</td>
<td>Hemizygous for Tg(Thy1-APP)3Somm</td>
<td>$333.51</td>
</tr>
<tr>
<td>Male</td>
<td>Male</td>
<td>Noncarrier</td>
<td>$333.51</td>
</tr>
</tbody>
</table>

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.

---

### Terms Of Use

**Terms Of Use**

**General Terms and Conditions**

---

**Additional Use Restrictions Apply**

**NOT AVAILABLE TO COMPANIES OR FOR COMMERCIAL USE**
- Strain(s) not available to companies or for-profit entities.

**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 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 NONINFRINGEMENT 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

<table>
<thead>
<tr>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Allele</td>
</tr>
<tr>
<td>By Gene</td>
</tr>
<tr>
<td>By Collection</td>
</tr>
</tbody>
</table>

All Related Strains
Leading the search for
TOMORROW'S CURES