

## C57BL/6-Tg(Thy1-PTGS2)303Kand/J

Stock No: 010703

 Coisogenic, Transgenic

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

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striatum, cerebral cortex, and hippocampus as directed by the murine Thy1.2 expression cassette. These overexpressing COX-2 transgenic mice exhibit PGE2 levels that are ~25-40-fold greater than non-transgenic controls.

### Donating Investigator

Katrin I Andreasson, Stanford University

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## GENETIC OVERVIEW

Genetic Background

Generation

### Tg(Thy1-PTGS2)303Kand

#### Alele Type

Transgenic (Inserted expressed sequence, Humanized sequence)

VIEW GENETICS

## RESEARCH APPLICATIONS

Neurobiology Research

Immunology, Inflammation and Autoimmunity Research

Research Tools

Apoptosis Research

VIEW ALL RESEARCH APPLICATIONS

## 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 hemizygous for the human Thy-1-COX-2 transgene (hCOX-2 transgene) are viable and fertile, with expression of human COX-2 (*PTGS2* or *PGE2*) directed primarily to neurons of the amygdala, striatum, cerebral cortex, and hippocampus by the murine Thy1.2 expression cassette. These overexpressing C57BL/6J COX-2 transgenic line 303 mice have PGE2 levels that are ~25-40-fold greater than non-transgenic controls (compared to ~10-12-fold overexpression in line 300; see Stock No. [010800](#)). At approximately 12 months of age, COX-2 transgenic mice develop an age-dependent deficit in spatial memory. Around 20 months of age, a less pronounced, but significant deterioration in performance of non-spatial memory tasks develops. Further progressive memory impairments are observed over time. These cognitive deficits are associated with parallel age-dependent increases in cortical neuronal apoptosis and glial activation. Transgenic mice exhibit enhanced hippocampal longterm synaptic plasticity. Chronic overexpression of neuronal COX-2 enzymatic activity leads to long-term cellular changes that result in diminished neuron viability in transient focal ischemia/ischemic injury challenge. Elevated expression of COX-2 leads to increased oxidative degradation of endocannabinoids (eCBs) resulting in abolished depolarization-induced suppression of inhibition (DSI; or eCB-induced suppression of GABAergic synaptic transmission). These human Thy-1-COX-2 transgenic mice may be useful to model chronic elevations in COX-2 enzymatic activity associated with neurodegenerative diseases and aging, oxidative metabolism of endocannabinoids in modulation of synaptic transmission and plasticity, and ischemia and postischemic inflammatory reaction.

#### + Development

#### + Expression Data

#### + Control Suggestions

#### + Selected References

### – Genetics

#### + Tg(Thy1-PTGS2)303Kand

## ⊖ Disease/Phenotype

+ Disease Terms

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+ Research Areas By Phenotype

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+ Mammalian Phenotype Terms by Genotype

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+ References

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## ⊖ 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:[Tg\(Thy1-PTGS2\)](#)

[Genotyping resources and troubleshooting](#)

### Breeding Considerations

When maintaining a live colony, hemizygous mice may be bred to wildtype (noncarrier) siblings or to C57BL/6NJ inbred mice (Stock No. [005304](#)).

[Additional Breeding and Husbandry Support](#)

### Citation

When using the C57BL/6-Tg(Thy1-PTGS2)303Kand/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #010703 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

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

# Domestic International

Pricing effective for USA, Canada and Mexico shipping destinations

## CRYORECOVERY - DOMESTIC PRICING

| SERVICE/PRODUCT | DESCRIPTION   | PRICE      |
|-----------------|---|------------|
| Cryo Recovery   | Hemizygous or Non Carrier for Tg(Thy1-PTGS2)303Kand | \$2,854.50 |

## RELATED PRODUCTS AND SERVICES

|                     |                                 |           |
|---------------------|---------------------------------|-----------|
| Frozen Mouse Embryo | C57BL/6-Tg(Thy1-PTGS2)303Kand/J | \$2595.00 |
|---------------------|---------------------------------|-----------|

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## 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

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## LICENSING INFORMATION

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