

**B6;129S4-Tsc2<sup>tm1Djk</sup>/J**

Stock No: **004686**

 Targeted Mutation

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

PLACE ORDER

[Email](#) [Download PDF](#) [Help](#)

### Donating Investigator

David J. Kwiatkowski, Brigham and Women's Hospital

READ MORE +

## GENETIC OVERVIEW

Genetic Background

Generation

*Tsc2<sup>tm1Djk</sup>*

**Allele Type**

**Gene Symbol**

**Gene Name**

Targeted (Null/Knockout)

*Tsc2*

tuberous sclerosis 2

VIEW GENETICS

## RESEARCH APPLICATIONS

Cancer Research

Developmental Biology 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

Exon 2 of the tuberous sclerosis 2 gene (*Tsc2*) has been replaced by a neo cassette, abolishing gene expression. TSC2 is a putative tumor suppressor. Mutation of TSC2 have been associated with the onset of tuberous sclerosis complex (TSC) which is characterized by the formation of non-malignant tumors in many different organs. Heterozygous (*Tsc2*<sup>+/-</sup>) mice are viable and fertile. Homozygous (*Tsc2*<sup>-/-</sup>) mice have an embryonic lethal phenotype, failing to develop past embryonic days 9.5 to 12.5 due to hepatic hypoplasia. Cultured neuroepithelial progenitor cells isolated from embryonic day 10.5 embryos display abnormal growth and differentiation. All heterozygotes develop multiple bilateral renal cystadenomas by 12-15 months of age. By 15 months, about half develop liver hemangiomas (more common in females than in males). Less than 10% develop extremity angiosarcomas or renal carcinoma. Little or no gene product (protein) is detected by Western blot in renal cystadenomas. PCR analysis reveals loss of the wildtype allele in about 30% of lesions. Phenotype variability is dependent on genetic background.

*Tsc2* haploinsufficiency causes mTOR hyperactivation: the subsequent autophagy inhibition results in autism spectrum disorder (ASD)-like basal dendritic spine pathology and social recognition/interaction deficits. Rapamycin treatment rescues the dendritic spine pruning defect and social abnormalities. *Tsc2*<sup>+/-</sup> mice do not exhibit stereotyped/repetitive behavior, motor defects or anxiety-like behavior.

### Development

### Control Suggestions

### Selected References

## Genetics

### *Tsc2*<sup>tm1Djk</sup>

## 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:[Tsc2alternate2](#)

Separated PCR:[Tsc2alternate2](#)

[Genotyping resources and troubleshooting](#)

### Breeding Considerations

When maintaining a live colony, heterozygous mice may be bred together or to wildtype mice from the colony. Homozygotes have an embryonic lethal phenotype. The expected coat color is Black.

[Additional Breeding and Husbandry Support](#)

### Citation

When using the B6;129S4-*Tsc2*<sup>tm1Djk</sup>/J mouse strain in a publication, please [cite the originating article\(s\)](#) and include JAX stock #004686 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

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**

## RELATED PRODUCTS AND SERVICES

Frozen Mouse Embryo

B6;129S4-Tsc2&lt;tm1Djk&gt;/J Frozen Embryos

\$2595.00

## 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](#)

QUESTIONS ABOUT TERMS OF USE

### ADDITIONAL USE RESTRICTIONS APPLY

[Notice to customers in Canada.](#)[Use of MICE by companies or for-profit entities requires a license prior to shipping.](#)

### LICENSING INFORMATION

Phone: 207-288-6470

Email: [TechTran@jax.org](mailto: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



## DO YOU NEED BALB/c MICE?

Rely on JAX to provide the models you need, when you need them.

[LEARN MORE](#)



CONTACT



DONATE



SUBSCRIBE

[JAX HOME](#) [CAREERS](#) [PRIVACY POLICY](#) [TERMS OF USE](#)

[RESEARCH CENTERS](#) [MOUSE GENOME INFORMATICS](#)

[MOUSE PHENOME DATABASE](#)

*Leading the search for*

# TOMORROW'S CURES



©2020 THE JACKSON LABORATORY

Choose other country or region

↑  
E E E D B

Did you find what you were looking for?

Yes  No