**Overview**

These Gak\textsuperscript{Fox} mutant mice possess loxP sites flanking exon 1 of the cyclin G associated kinase (Gak) gene. GAK functions as a cochaperone with Hspa8 (Hsc70). GAK is involved in the process of clathrin-mediated endocytosis and is critical to development.

**Donating Investigator**

Lois Greene, NIH
**RESEARCH APPLICATIONS**

**Research Tools**

---

**Details**

**Detailed Description**

These Gak\textsuperscript{flo}\textsuperscript{x} mutant mice possess loxP sites flanking exon 1 of the cyclin G associated kinase (Gak) gene. GAK, a cyclin-dependent protein kinase, is a multidomain protein that functions as a cochaperone with Hspa8 (Hsc70). GAK is involved in the process of clathrin-mediated endocytosis and is critical to development.

Mice that are homozygous for this allele are viable and fertile. When bred to mice that express tissue-specific Cre recombinase, resulting offspring will have a null allele in the cre-expressing tissues.

For example, when bred to mice carrying Tg(Nes-Cre)1Kln, neuronal Cre recombinase expression results in early lethality and a failure of neuroprogenitor cells to proliferate.

When bred to mice carrying Tg(Alb-cre)21Mgn, Cre recombinase expression in the liver results in lethality by day 5, jaundice, disorganized bile ducts, undifferentiated hepatoblasts, fragmented Golgi and failure to accumulate glycogen.

When bred to adult mice carrying Tg(CAG-cre/Esr1\textsuperscript{+})5Amc, tamoxifen-inducible cre-recombinase expression results in death within days of tamoxifen treatment.

When bred to mice carrying Tg(KRT14-Cre)1Amc, Cre recombinase expression results in the epidermis, results in postnatal lethality, a defective epidermal barrier and failure to differentiate epidermal layers.

---

**Development**

---

**Control Suggestions**

---

**Selected References**

---

**Genetics**

---

**Gak\textsuperscript{tm}\textsuperscript{Regr}**
Disease/Phenotype

Disease Terms

Research Areas By Genotype

Mammalian Phenotype Terms by Genotype

References

Technical Support

CONTACT TECHNICAL SUPPORT

Genotyping Protocols
Standard PCR: Gak<sup>tm2Legr</sup>
Genotyping resources and troubleshooting

Breeding Considerations
While maintaining a live colony, these mice are bred as homozygotes.
Additional Breeding and Husbandry Support

Citation
When using the B6.129S6-Gak<sup>tm2Legr</sup>/Mmjax mouse strain in a publication, please cite the originating article(s) and include MMRRC stock #36793 in your Materials and Methods section.
Production of mice from cryopreserved embryos or sperm occurs in a maximum barrier room, G200

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

QUESTIONS ABOUT TERMS OF USE

Licensing Information
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