

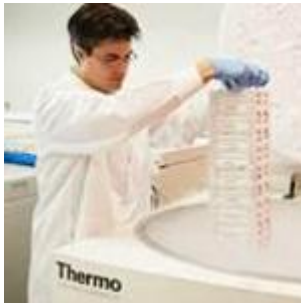
## In This Issue

Dear Colleague,

TIGM continues to be a major source of knockout mouse and mutant ES cell clones. Since 2006, TIGM has provided more than 290 mouse lines and more than 2,900 ES cell lines to external researchers. We have expanded our operations in our College Station facility and recently completed one year certification of pathogen-free status. In addition to providing mice and ES cells, TIGM also offers transgenic services to the domestic and international research communities and high-throughput screening of our ES cell library. Important scientific breakthroughs continue to be made using TIGM resources and more than 45 peer-reviewed publications have utilized TIGM resources. Finally, we now have more than 150 cryopreserved lines available on a cost recovery basis of \$3,500.

## Production Update

### ***TIGM continues as a major international resource***



Since beginning operations in 2006, TIGM has served as a major resource to the international scientific community. In that time, TIGM has delivered more than 530 mouse and ES cells orders to more than 290 academic and commercial institutions in over 26 countries. Overall, more than 4,300 individual gene trapped ES cell clones have been expanded at TIGM; almost 2,900 of those were provided to external researchers. In addition, a total of over 6,724 individual investigators from more than 750 academic and research institutions and commercial entities representing 35 countries, have queried TIGM with information requests.

These resources are being used with great success and to date there are at least 40 peer-reviewed publications featuring TIGM mice or cells. For the complete list of publications please visit <http://www.tigm.org/publications/>.

## Certified pathogen-free for one continuous year

### ***College Station production facility providing quality mice***

TIGM has continued supplying healthy pathogen-free mice from our College Station facility. All mice produced by TIGM for use in research are raised and kept in our specific pathogen free shower-in vivarium. Environmental parameters, including temperature, humidity and airflow for each room are monitored 24/ 7. In addition, each room has individual access so that only personnel authorized to work with those mice can enter the room. Rigorous health monitoring has shown that TIGM has maintained pathogen-free status for the past 12 months.



## Injecting non-TIGM Clones & Other Transgenic Services

### ***Experience injecting KOMP & EUCOMM clones***



TIGM has been injecting C57BL/6 ES cell clones on a daily basis for more than 5 years. Our team also has experience and expertise working with the conditional JM8 clones produced by the KOMP and EUCOMM knockout mouse projects. TIGM has demonstrated a 100% success rate in generating chimeras from injecting such clones and 87% achieved germline. If you want your clones to be injected quickly and with high success rate, please contact us to arrange for blastocyst injection service. You can also request your clones to be shipped directly to TIGM. Additional breeding services include deleting the knockout-first cassettes in the KOMP and EUCOMM alleles as well producing cohorts with tissue-specific knockouts.

If you need to generate a constitutive or conditional mutation, TIGM offers a complete knockout package that includes vector design and construction, electroporation into C57BL/6 or 129/SvEv cells, clone screening and confirmation of targeted events, blastocyst injection and heterozygous mouse production. Alternatively, each step of this process can be performed as a separate service.

Other services include:

- Pronuclear Injection
- ES cell services
  - Electroporation

- Sperm and Embryo Cryopreservation
- Rederivation
  - via embryo transfer
  - via IVF
- Frozen or Live Embryo Transfer
- Cryostorage
- Breeding services
  - line expansion
  - colony management

Please contact us at [info@tigm.org](mailto:info@tigm.org) or (979) 845-TIGM to discuss your project needs or find out how we can help you with your research.

## TIGM Congratulates TBAALAS for 50 years!

### *TIGM presents its progress with aggregation*

The Texas Branch of the American Association for Laboratory Animal Science recently held its annual meeting in College Station, Texas. TIGM congratulates TBAALAS for 50 years of service to the Laboratory Animal Sciences and looks forward to the next 50 years. TIGM also presented its latest progress in using aggregation as a supplement and eventual replacement to microinjection for generating transgenic mice.



## High Throughput ES Screening Available

### *TIGM makes high throughput ES cell screening available as a service*

TIGM's unique resource containing more than 350,000 stable mutations and more than 10,000 inactivated genes is currently being utilized in a high throughput screening process. The researchers are screening the cells to investigate reaction of these cells to radiation, environmental contaminants, toxins and bacterial and viral pathogens to determine if the mutations found within specific lines mitigate normal response. The lines which are found to show a different reaction to the test material are then grown into mice which are then tested to validate the initial results. The advantage of using ES cells in gene target screening is that they can, with some technical skill, model specific tissues/cell types using a totally in vitro system; combined with the ability to generate in vivo animal models from those same lines should that be desired, mutant ES cell clones represent a powerful tool for target discovery and validation.

In partnership with the Texas AgriLife Genomics and Bioinformatics Service Facility (TAGS), TIGM is now offering high throughput ES screening available as a fee-for service or as a collaboration. TAGS was established in the fall of 2010 and provides access to the latest genomic technologies, world-class bioinformatics expertise and technology development to researchers across the TAMU system. TAGS recently acquired an Illumina HiSeq 2500 next generation sequencing system. The HiSeq represents a 4-5 fold increase in sequencing power and the equivalent of 200 human genomes can be sequenced per run.

Please contact us at [info@tigm.org](mailto:info@tigm.org) if you would like more information about this service.

## TIGM International Mouse Repository

### *More than 150 cryopreserved lines now available*

We express our appreciation to everyone who returned mouse lines to the TIGM International Mouse Repository during the past year.

After producing a mouse line, TIGM cryopreserves the sperm and makes those lines available to the international community in compliance with most publishers and NIH resource sharing requirements. We also ask our ES cell customers to promptly ship the mouse lines back to us because we value each knockout line and want to ensure each mutation is preserved for future use by the scientific community. Should someone contact you to obtain the published mouse, you can forward those requests to us and we will take care of the rest. Depositing your lines at TIGM also means significant cost savings to you as it allows you to eliminate the colony once your research is complete and you can be confident that it will be available should you decide to revisit the work.



The TIGM International Mouse Repository currently has 100 C57/BL6N and 51 129/SvEv x C57BL6/N cryopreserved lines which are available to the public under the same Terms and Conditions as our other lines. Mouse lines in the repository are made available on a cost recovery basis (currently \$3,500). The current list of lines available in the repository can be found at <http://www.tigm.org/repository/>.

Please contact us at [info@tigm.org](mailto:info@tigm.org) for additional information and a price quote.

# Latest Publications Using TIGM Resources

## 45 peer-reviewed publications

TIGM gene-trapped stable alleles play an important role in leading research. In a recent paper published by Dr. Daniel K. Nomura in the November 11, 2011 issue of Science, mice with the MAGL gene disrupted by gene trapping display neuroprotection in a parkinsonian mouse model ([Endocannabinoid Hydrolysis Generates Brain Prostaglandins That Promote Neuroinflammation](#), Nomura DK, et al) These animals are spared the hemorrhaging caused by COX inhibitors in the gut, where prostaglandins are instead regulated by cytosolic PLA2. These findings identify MAGL as a distinct metabolic node that couples endocannabinoid to prostaglandin signaling networks in the nervous system and suggest that inhibition of this enzyme may be a new and potentially safer way to suppress the proinflammatory cascades that underlie neurodegenerative disorders.



We look forward to listing your publication acknowledging the use of TIGM mouse models on our website. More than 45 peer-reviewed research papers have been published using mice derived from TIGM resources. Below is a selection of publications from 2011:

[Deficiency of multidrug and toxin extrusion 1 enhances renal accumulation of paraquat and deteriorates kidney injury in mice.](#) Li Q, Peng X, Yang H, Wang H, Shu Y. Mol Pharm. 2011 Dec 5;8(6):2476-83.

[The transcription factor Cux2 marks development of an A-delta sublineage of TrkA sensory neurons.](#) Bachy I, Franck MC, Li L, Abdo H, Pattyn A, Ernfrors P. Dev Biol. 2011 Dec 1;360(1):77-86.

[Disruption of K\(2P\)6.1 produces vascular dysfunction and hypertension in mice.](#) Lloyd EE, Crossland RF, Phillips SC, Marrelli SP, Reddy AK, Taffet GE, Hartley CJ, Bryan RM Jr. Hypertension. 2011 Oct;58(4):672-8.

[Interleukin-17C Promotes Th17 Cell Responses and Autoimmune Disease via Interleukin-17 Receptor E.](#) Chang SH, Reynolds JM, Pappu BP, Chen G, Martinez GJ, Dong C. Immunity 2011 Oct 28;35(4):611-21

[Behavioural phenotyping of knockout mice for the sigma-1 \(ïf\(1\)\) chaperone protein revealed gender-related anxiety, depressive-like and memory alterations.](#) Chevallier N, Keller E, Maurice T. J Psychopharmacol. 2011 Jul;25(7):960-75.

[The ubiquitin ligase Peli1 negatively regulates T cell activation and prevents autoimmunity.](#) Chang M, Jin W, Chang JH, Xiao Y, Brittain GC, Yu J, Zhou X, Wang YH, Cheng X, Li P, Rabinovich BA, Hwu P, Sun SC. Nat Immunol. 2011 Aug 28;12(10):1002-9.

[Functional and Topological Analysis of Pen-2, the Fourth Subunit of the Gamma-secretase Complex.](#) Leen Bammens, Lucía Chávez-Gutiérrez, Alexandra Tolia, An Zwijsen, and Bart De Strooper. J. Biol. Chem. 2011; 286:12271-12282.

[Regulation of mammalian Notch signaling and embryonic development by the protein O-glucosyltransferase Rumi.](#) Fernandez-Valdivia R, Takeuchi H, Samarghandi A, Lopez M, Leonardi J, Haltiwanger RS, Jafar-Nejad H. Development. 2011 May;138(10):1925-34.

[Bioactivation of pentaerythryl tetranitrate by mitochondrial aldehyde dehydrogenase.](#) Martina Griesberger, Alexander Kollau, Gerald Wölkart, M. Verena Wenzl, Matteo Beretta, Michael Russwurm, Doris Koesling, Kurt Schmidt, Antonius C. F. Gorren, and Bernd Mayer. Mol. Pharmacol. 2011 Mar; 79(3):541-8

[Hyperglycemia-induced cerebral hematoma expansion is mediated by plasma kallikrein.](#) Liu J, Gao BB, Clermont AC, Blair P, Chilcote TJ, Sinha S, Flaumenhaft R, Feener EP. Nat Med. 2011 Feb;17(2):206-10.

[A mouse model of hereditary folate malabsorption: deletion of the PCFT gene leads to systemic folate deficiency.](#) Salojin KV, Cabrera RM, Sun W, Chang WC, Lin C, Duncan L, Platt KA, Read R, Vogel P, Liu Q, Finnell RH, Oravec T. Blood. 2011 May 5;117(18):4895-904.

For the most up to date listing please see our website at <http://www.tigm.org/publications/>.

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