

# Research Resources

"We can judge the heart of a man by his treatment of animals."....Immanuel Kant

**Vol. I, No. 8**

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**Research Resources will be sent out to Active Project Directors, but I encourage you to share this will all your staff, and, if any want to be included in the mailing, have them send a request to [stacy.wells@louisville.edu](mailto:stacy.wells@louisville.edu). If you would like to contribute to the newsletter, you may send your items to the same address.**

## **IACUC Policy: Housing Rodents in Investigator Laboratories**

Housing rodents in an investigator's laboratory overnight requires IACUC approval. Requests to house animals in a laboratory overnight must be stated in a letter addressed to the IACUC. The letter must include scientific justification for such housing. An animal husbandry protocol form must be completed and submitted with the proposal for approval by the Director, Research Resources Center, before a request to house animals in a laboratory overnight will be considered by the IACUC. The approved animal care protocol must be posted or otherwise available for easy reference in the investigator's laboratory. Investigator laboratories may be inspected by RRF veterinary staff prior to approval of an overnight housing request.

## **A Special Thanks**

The Kentucky Branch of the American Association of Animal Science would like to give a special thanks to the following people who sponsored the Philanthropy Committee's Bowl-a-Thon.

Russell Prough	Darlene Burke
Bill King	Tom Borders
Carolyn Klinge	Janice Ditslear
Joe Clinkenbeard	Jeff Childs
Vicki Brown	Carol Vanover
Eric Collins	Charlie Lucas
Carolyn Wiseman	Jean Hickey
Kathleen Hickey	Carroll Dunavent
Janet Spence	The VFW
The American Legion	

The winning sponsor of the drawing for a Home Depot gift card was Tom Borders.

## **Comparing Isoflurane with Tribromoethanol Anesthesia for Echocardiographic Phenotyping of Transgenic Mice**

The following is the abstract for this publication written by **David K Chu,<sup>1,\*</sup> Maria C Jordan,<sup>2</sup> Jeanne K Kim,<sup>2</sup> Marcelo A Couto,<sup>1</sup> and Kenneth P Roos<sup>2</sup>** and published in the July 2006 issue of JAALAS. If you would like to read the full study, it is available to AALAS members on the AALAS web site or you may contact one of the RRF staff for the actual journal.

Cardiac phenotyping of transgenic mice typically requires anesthesia. Chemical-grade tribromoethanol (TBE) is commonly used for this purpose due to its relatively short duration of action, modest cardio depressive effects, and its noncontrolled status. In the present study, we used both genders of C57BL/6;C3H-Tg(Slc8a1)hKdp transgenic (TG) mice and C57BL/6;C3H wild-type (WT) mice to evaluate isoflurane (ISF) as a pharmaceutical-grade alternative to TBE for echocardiography and electrocardiography. Baseline target physiologic heart rates (beats per minute) were established by use of telemetry as  $544 \pm 10$  in WT mice and  $580 \pm 21$  in TG mice. TG and WT animals were anesthetized with either 0.8% to 1% inhalational ISF or 250 mg/kg intraperitoneal TBE. The following parameters were measured or calculated according to the previously defined

physiologic heart rates; end diastolic and systolic dimensions; posterior wall and ventricular septal thicknesses; left ventricular mass, aortic ejection times; left ventricular fractional shortening; velocity of circumferential fiber shortening; and left ventricular ejection fraction. No significant difference between anesthetics was found for any measured cardiac parameters. However, the time required for data acquisition was significantly shorter for ISF (10 min) than for TBE (14 min). This study demonstrates that comparable echocardiographic results can be obtained at higher throughput by use of pharmaceutical grade ISF than with chemical-grade TBE.

### August 2006 Comparative Medicine

The following are the titles of the publications in the August issue of AALAS's journal Comparative Medicine:

- [A Novel Titanium Wound Chamber for the Study of Wound Infections in Pigs](#)
- [Characterization of Hepatic Drug-metabolizing activities of Bama Miniature Pigs \(\*Sus scrofa domestica\*\): Comparison with Human Enzyme analogs](#)
- [Persistent Infection with and Serologic Crossreactivity of Three Novel Murine Noroviruses](#)
- [Sleep and Temperature Responses of Inbred Mice with \*Candida albicans\*-Induced Pyelonephritis](#)
- [Systemic and Mucosal antibody Response in Experimental \*Chlamydia pneumoniae\* Infection of Mice](#)
- [The Effects of aging on Hormone and Reproductive Cycles in Female Chimpanzees \(\*Pan troglodytes\*\)](#)
- [Ultrasound Diagnosis of Mouse Pregnancy and Gestational Staging](#)

If you would like to view copies of these articles, please contact the RRF office or one of the husbandry supervisors. Or visit the AALAS website at <http://www.aalas.org/publications>.

### Senators Feinstein and Ivanhoe Improved Bipartisan AETA Language

September 8th Senator James Inhofe (R-OK) and Senator Dianne Feinstein (D-CA) introduced an improved bi-partisan version of the Animal Enterprise Terrorism Act in the

Senate. While the bill essentially remains the same, this new language clarifies Congressional intent by specifying that nothing in the bill shall be construed to prohibit conduct that is protected by the First Amendment. Please note that in order to achieve this bipartisan bill, the death penalty and wiretapping provisions have been deleted from the original text. While a number for the Senate bill is not yet available, it will still be named the Animal Enterprise Terrorism Act.

A press release issued by Senators Inhofe and Feinstein is attached and can also be found at the following site:

<http://epw.senate.gov/pressitem.cfm?party=rep&id=262681>.

To date the biomedical research community has sent over 5,000 letters to Capitol Hill and it is making a difference. We have heard from many Members of Congress telling us they have heard from you. Your letters and phone calls give them a reason to stand behind the bill. If you know of someone who has not written to their Members of Congress via our online CapWiz letter writing service, please take a moment now to forward this site:

<http://capwiz.com/nabr/issues/alert/?alertid=8650226&type=CO>

As soon as we learn the Congressional schedule for both the House and Senate bills, we will get back to you for a last major push to get this bill passed.

### New Mouse Strains from Jackson Labs

**B6(SJL)-Tg(SBE/Tk-luc)<sup>7</sup>Twc/J (005999)** This strain expresses the firefly luciferase gene when the Smad2/3-dependent signaling pathway is activated. Hemizygotes are viable, fertile, and look and behave normally. The strain may be used to research the role of transforming growth factor beta in intracellular signaling.

[http://jaxmice.jax.org/strain/005999.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/005999.html?WT.mc_id=201318)

**B6C3-Tg(tetO-APP<sup>swe/ind</sup>)8-85Dbo/J (006004)** This strain expresses a chimeric mouse/human amyloid precursor protein (APP<sup>swe/ind</sup>) transgene under the control of a tetracycline-responsive promoter element (TRE). Hemizygotes are viable and fertile. The strain can be bred to another

transgenic mouse strain expressing reverse tetracycline-controlled transactivator protein (rtTA) or tetracycline-controlled transactivator protein (tTA) to produce bitransgenic offspring, in which tissue APP<sup>swe</sup>/ind transgene expression can be regulated with the tetracycline analog, doxycycline. This model may be used to research Alzheimer's disease.

[http://jaxmice.jax.org/strain/006004.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006004.html?WT.mc_id=201318)

**B6.Cg-Tg(APP<sup>swe</sup>)E1-2Dbo/J (006005)**

This strain expresses a chimeric mouse/human amyloid precursor protein (APP<sup>swe</sup>) transgene under the control of the mouse prion protein promoter. Hemizygotes are viable and fertile. Over half the females do not survive past 15 months of age. This mutant may be used to research Alzheimer's disease.

[http://jaxmice.jax.org/strain/006005.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006005.html?WT.mc_id=201318)

**B6.Cg-Tg(APP)A-2Dbo/J (006006)** This strain expresses the human amyloid precursor protein (APP) under the control of the mouse prion protein promoter. Hemizygotes are viable and fertile. This mutant may be used to research Alzheimer's disease.

[http://jaxmice.jax.org/strain/006006.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006006.html?WT.mc_id=201318)

**B6.129-Ly9<tm1Mckn>/J (006011)**

Homozygotes for this targeted mutation of the lymphocyte antigen 9 (Ly9) gene are viable, fertile, and look and behave normally. In culture, their splenocytes exhibit defects in T cell activation and Th2 cytokine production, but respond normally to cytokine stimulation. This mutant may be used to research innate and adaptive immunity, lymphocyte signaling/costimulation, T cell activation, Th1/Th2 cytokine function, and CD2/SLAM family signal transduction.

[http://jaxmice.jax.org/strain/006011.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006011.html?WT.mc_id=201318)

**129-Gt(ROSA)26Sor<tm1(EGFP)**

**Luo>/J (006053)** This EGFP-expressing strain is a control for MADM (mosaic analysis with double markers) mice. The mice are viable and look and behave normally. Using the MADM system, researchers can generate genetic mosaics for determining lineal relationships and pleiotropic gene functions. This mutant may also be used to research cell differentiation and mitosis.

[http://jaxmice.jax.org/strain/006053.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006053.html?WT.mc_id=201318)

**129-Gt(ROSA)26Sor<tm1(Dsred2/EGFP) Luo>/J (006067)** Mice from this mutant strain are viable and look and behave

normally. However, whereas homozygous females have low fertility, the fertility of heterozygous females is normal. This strain is designed for MADM (mosaic analysis with double markers), and must be crossed to a strain with a reciprocal mutation at the same locus. The resulting offspring have one copy of each reciprocal mutation on homologous chromosomes (trans-heterozygous) and must next be bred to a Cre-expressing strain for fluorescent protein expression. Using the MADM system, researchers can generate genetic mosaics for determining lineal relationships and pleiotropic gene functions. This strain may also be used to research cell differentiation and mitosis.

[http://jaxmice.jax.org/strain/006067.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006067.html?WT.mc_id=201318)

**B10.Cg-H2k Tg(NFkB/Fos-luc)**

**26Rinc/J (006100)** This strain is transgenic for the luciferase gene driven by two copies of the NF-kappaB (NF-kB or NFkB) regulatory element. Hemizygotes are viable, fertile, and look and behave normally. With this strain, NF-kB transcriptional activity can be detected in any tissue. It may be used to research immunology, cellular signaling, signal transduction, apoptosis, and transcription factors.

[http://jaxmice.jax.org/strain/006100.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006100.html?WT.mc_id=201318)

**B6.Cg-Tg(TRE/Prl-luc)31FlvRinc/J**

**(006101)** This strain is transgenic for the firefly luciferase gene. Hemizygotes are viable, fertile, and look and behave normally. When stimulated with phorbol myristate acetate (PMA) and ionomycin, CD4 + T, CD8 + T, and B cells respectively transcribe high levels of, lower levels of, and no luciferase. The reporter transgene faithfully identifies AP-1 transcriptional activity in vivo and in vitro. This strain may be used to research immunology, including T cell receptor-mediated and co-stimulatory dependent T cell activation, signal transduction, apoptosis, and induced tumor models.

[http://jaxmice.jax.org/strain/006101.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/006101.html?WT.mc_id=201318)

**STOCK Mbtps1<tm1Jdh>/J (005989)**

Homozygotes for this floxed targeted mutation of the membrane-bound transcription factor peptidase, site 1 (Mbtps1) gene are viable and fertile. When bred to mice carrying the Mx1-Cre transgene, they produce offspring in which

expression of the endogenous gene in the liver can be disrupted. This strain may be used to research lipid homeostasis, cholesterol and fatty acid metabolism, and SREBP activation pathways.

[http://jaxmice.jax.org/strain/005999.html?WT.mc\\_id=201318](http://jaxmice.jax.org/strain/005999.html?WT.mc_id=201318)

### **New Congressional Research Service Report on the Animal Welfare Act**

The **Library of Congress' Congressional Research Service (CRS)** has issued an updated report synthesizing the **Animal Welfare Act (AWA)**. In addition to being a good summary of the Act's key provisions and legislative history, the report provides background on pieces of legislation that have sought to amend the AWA over the years, including currently pending legislation such as the **Pet Safety and Protection Act** and the **Pet Animal Welfare Statute**. To read go to <http://www.nabr.org/pdf/CRSreport.pdf>.

### **DEHS Required Training**

Here is a reminder of the dates of the DEHS training on Lab Safety/Hazardous Waste (LS/HW) and Bloodborne Pathogens (BP). LS/HW is from 9:00-10:00AM and BP is from 10:00-11:00AM. Both sessions are held in the **Dental School-Room 105** on the following dates:

**September 13, October 11, November 8, and December 13.**

Bring employee ID number to sign in. Contact [erin.foley@louisville.edu](mailto:erin.foley@louisville.edu) to reserve your spot.