

# CCAC training module on: laboratory animals used in biomedical research

## Reference and Resource Handout

### Note:

This is a list of all the relevant references and resources cited within this module. Animal users should consult relevant experts and scientific literature for the most recent information on the species and techniques under consideration.

### Slide 8 Choosing an Appropriate Animal Model

CCAC guidelines on: animal use protocol review (1997). Visit the CCAC website at [www.cac.ca](http://www.cac.ca) to access and consult this guidelines document.

CCAC training module on: the three Rs of humane animal experimentation (2003). Visit the CCAC website at [www.cac.ca](http://www.cac.ca) to access and consult this training module.

CCAC Three Rs microsite: <http://www.cac.ca/en/alternatives/>

Dell R.B., Hollerhan S., and Ramakrishnan A. (2002) Sample Size Determination. *Institute for Laboratory Animal Research Journal* 43(4): 207-213.

Festing M.F. (2010) Improving toxicity screening and drug development by using genetically defined strains. *Methods in Molecular Biology* 602: 1-21.

Festing M.F.W. and Altman D.G. (2002) Guidelines for the Design and Statistical Analysis of Experiments Using Laboratory Animals. *Institute for Laboratory Animal Research Journal* 43(4): 244-258.

Festing M.F.W. (2006) *Animal models in research*. Isogenic.info: [http://www.isogenic.info/html/animal\\_models\\_in\\_research.html](http://www.isogenic.info/html/animal_models_in_research.html)

Johnson P.D. and Besselsen D.G. (2002) Practical Aspects of Experimental Design in Animal Research. *Institute for Laboratory Animal Research Journal* 43(4): 202-206.

Shaw R., Festing M.F.W., Peers I. and Furlong L. (2002) Use of factorial designs to optimize animal experiments and reduce animal use. *Institute for Laboratory Animal Research Journal* 43(4): 223-232.

Wood M.W. and Hart L.A. (2008) Selecting appropriate animal models and strains: making the best use of research information and outreach. *Alternatives to Animal Testing and Experimentation* 14:303-306.

## Slide 9 Factors that Influence Animal Research

Lipman N.S. and Perkins S.E. (2002) Factors that May Influence Animal Research. In: *Laboratory Animal Medicine*, 2<sup>nd</sup> ed. (Fox J.G., Anderson L.C., Loew F.M. and Quimby F.W., eds) Orlando FL: Academic Press, chapter 29, pp. 1143-1184.

## Slide 14 Animal Related Factors

CCAC training module on: *infectious diseases* (2010). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

Charles River Laboratories. (2009) *Technical sheet. Fur, Skin, and Ear mites*. [http://www.criver.com/SiteCollectionDocuments/rm\\_ld\\_r\\_mites.pdf](http://www.criver.com/SiteCollectionDocuments/rm_ld_r_mites.pdf)

## Slide 15 Physical & Environmental Factors

Castelhano-Carlos M.J. and Baumans V. (2009) The impact of light, noise, cage cleaning and in-house transport on welfare and stress of laboratory rats. *Laboratory Animals* 43(4):311-27.

Canadian Council on Animal Care (1993) The Environment. In: *Guide to the Care and Use of Experimental Animals*, vol. 1, 2<sup>nd</sup> ed. Ottawa ON: CCAC, chapter III, pp.52-65. Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this guide.

Gonder J.C. and Laber K. (2007) A renewed look at laboratory rodent housing and management. *Institute for Laboratory Animal Research Journal* 48 (1): 29-36.

Hessler J.R. and Hoglund U. (2003) Laboratory Animal Facilities and Equipment for Conventional, Barrier, and Containment Housing Systems. In: *Handbook of Laboratory Animal Science*, Vol. 1, 2<sup>nd</sup> ed. (Hau J. and Van Hoosier G.L. Jr., eds.) Boca Raton FL: CRC Press, chapter 8, pp. 127-172.

Johnson N.A. and Nevalainen T. (2003) Impact of the Biotic and Abiotic Environment on Animal Experiments. In: *Handbook of Laboratory Animal Science*, Vol. 1, 2<sup>nd</sup> ed. (Hau J. and Van Hoosier G.L. Jr., eds.) Boca Raton FL: CRC Press, chapter 13, pp. 311-326.

Lipman N.S. (2007) Design and Management of Research Facilities for Mice. In: *The Mouse in Biomedical Research*, Vol. 3, 2<sup>nd</sup> ed. (Fox J.G., Barthold S.W., Davisson M.T., Newcomer C.E., Quimby F.W. and Smith A.L., eds.) New York NY: Academic Press, chapter 9, pp. 271-320.

## Slide 18 Physical & Environmental Factors

Dauchy R.T., Sauer L.A., Blask D.E. and Vaughan G.M. (1997) Light Contamination During the Dark Phase in "Photoperiodically Controlled" Animal Rooms: Effect on Tumor Growth and Metabolism in Rats. *Laboratory Animal Science* 47 (5): 511-518.

Memarzadeh F., Harrison P.C., Riskowski G.L. and Henze T. (2004) Comparison of Environment and Mice in Static and Mechanically Ventilated Isolator Cages with Different Air Velocities and Ventilation Designs. *Contemporary topics in laboratory animal science* 43(1):14-20.

## Slide 20 Physical & Environmental Factors

Barnard D.E., Lewis S.M., Teter B.B. and Thigpen J.E. (2009) Open- and Closed-Formula Laboratory Animal Diets and their Importance to Research. *Journal of the American Association for Laboratory Animal Science* 48(6):709-713.

Lauer A.M., May B.J., Hao Z.J. and Watson J. (2009) Sounds levels in modern rodent housing rooms are an uncontrolled environmental variable with fluctuations mainly due to human activities. *Laboratory Animals* 38 (5): 154-160.

## Slide 21 Husbandry, Animal Care & Handling Factors

Canadian Council on Animal Care (1993) Laboratory Animal Facilities. In: *Guide to the Care and Use of Experimental Animals*, vol. 1, 2<sup>nd</sup> ed. Ottawa ON: CCAC, chapter II, pp.44-51. Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this guide.

## Slide 22 Husbandry, Animal Care & Handling Factors

Castelhano-Carlos M.J. and Baumans V. (2009) The impact of light, noise, cage cleaning and in-house transport on welfare and stress of laboratory rats. *Laboratory Animals* 43(4):311-27.

Lawlor M. (1990) The size of rodent cages. In: *Guidelines for the Well-Being of Rodents in Research* (Guttman H.N. ed.). Bethesda MD: Scientists Center for Animal Welfare. pp.19-28.

Swallow J., Anderson D., Buckwell A., Harris T., Hawkins P., Kirkwood J., Lomas M., Meacham S., Peters A., Prescott M., Owen S., Quest R., Sutcliffe R. and Thompson K. (2005) Guidance on the transport of laboratory animals: report of the Transport Working Group established by the Laboratory Animal Science Association (LASA). *Laboratory Animals* 39(1): 1-39.

## Slide 23 Husbandry, Animal Care & Handling Factors

CCAC training module on: *environmental enrichment* (2003). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

CCAC Three Rs microsite: <http://www.ccac.ca/en/alternatives/>

Laber K., Veatch L.M., Lopez M.F., Mulligan J.K. and Lathers D.M. (2008) Effects of housing density on weight gain, immune function, behavior, and plasma corticosterone concentrations in BALB/c and C57BL/6 mice. *Journal of the American Association for Laboratory Animal Science* 47(2):16-23.

## Slide 24 Husbandry, Animal Care & Handling Factors

Balcombe J.P., Barnard N.D. and Sandusky C. (2004) Laboratory routines cause animal stress. *Contemporary topics in laboratory animal science* 43(6):42-51.

Duke J.L., Zammit T.G. and Lawson D.M. (2001) The effects of routine cage-changing on cardiovascular and behavioral parameters in male Sprague-Dawley rats. *Contemporary topics in laboratory animal science* 40(1): 17-20.

Hemsworth P.H., Barnett J.L. and Hansen C. (1987) The influence of handling by humans in the behaviour, reproduction and corticosteroids of male and female pigs. *Applied Animal Behavioural Science*. 17(3):245-252.

## Slide 26 Experimental Manipulation Factors

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CCAC training module on: *analgesia* (2003). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

CCAC training module on: *pain, distress and endpoints* (2010). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

Conour L.A., Murray A. and Brown M.J. (2007) Preparation of Animals for Use in the Laboratory, theme issue. *Institute for Laboratory Animal Research* 47(4):283-293.

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CCAC training module on: *analgesia* (2003). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

CCAC training module on: *anesthesia* (2003). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.

CCAC training module on: *pain, distress and endpoints* (2010). Visit the CCAC website at [www.ccac.ca](http://www.ccac.ca) to access and consult this training module.