

# IN VIVO RESEARCH IN ICELAND: AN INSIGHT INTO THE PROS AND CONS IN A SMALL COMMUNITY

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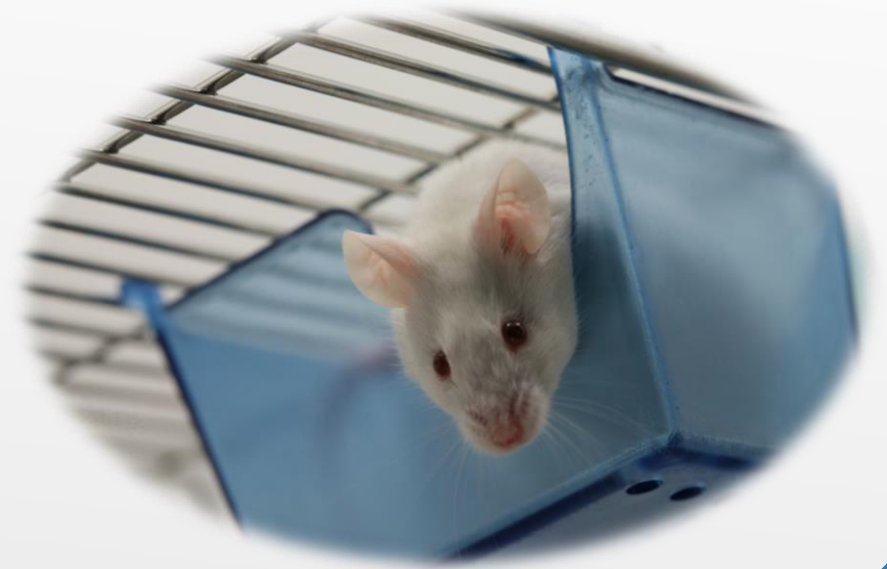


## ARCTICLAS

- ▶ Approx. 500m<sup>2</sup>
- ▶ Housing capacity
  - ▶ Approx. 2.000 mice
- ▶ Approx. 100 rats
- ▶ Provides service in the field of in vivo research
- ▶ University of Iceland and companies in Icelandic and abroad
  - ▶ Consultancy
  - ▶ Assistance in application for license
  - ▶ Conduct experiments
- ▶ Training and courses - FELASA A/B/D
  - ▶ Course via University of Copenhagen
  - ▶ In collaboration with Institution for Experimental Pathology, Keldur
- ▶ Do not conduct our own research

# NUMBER OF ANIMALS USED IN EXPERIMENTS IN ICELAND 2019

- ▶ Mice - 1395
- ▶ Rats – 43
- ▶ Rabbits – 23
- ▶ Horses - 147
- ▶ Sheep – 14
- ▶ Fish – 3010
  - ▶ Zebrafish
  - ▶ Farmed fish
  - ▶ Wild fish



# MICE STUDIES – UNIVERSITY OF ICELAND

- ▶ Genetic studies (Eiríkur Steingrímsson PhD)
  - ▶ GEM - Breeding
  - ▶ Mitf gene
  - ▶ Pigmented stem cells of and melanoma
- ▶ Kabuki and Pilarowski Bjornsson syndrome (dr. Hans Tomas Björnsson)
  - ▶ GEM - Breeding
    - ▶ Phenotyping
    - ▶ Behavioral studies
      - ▶ Open field
      - ▶ Water maze
      - ▶ Hearing research in mice
      - ▶ Research in heat control of mice
- ▶ Crisper Cras6

# MOUSE STUDIES – UNIVERSITY OF ICELAND



- ▶ Ocular research (Þór Eysteins PhD)
  - ▶ Rodent retinal microscopy and fundus photography
  - ▶ Rodent electroretinography (ERG)
- ▶ Immunological studies (Ingileif Jonsson PhD, Stefania Bjarnasson PhD)
  - ▶ Immunization of newborn pups
- ▶ Myelin regeneration in the CNS
  - ▶ Stereotaxic instrument

# MICE STUDIES

- ▶ PK and PD studies
- ▶ Diabetes
  - ▶ Pharmacodynamic
  - ▶ efficacy studies
- ▶ Dietary research
- ▶ Respiratory challenge tests
  - ▶ So<sub>2</sub> inhalation – ventilator induce injury
- ▶ Wound treatment
- ▶ Monoclonal antibody production
  - ▶ Immunization studies
- ▶ Polyclonal antibody production
- ▶ Chancer research
  - ▶ Take studies, efficacy of immunotherapy,
  - ▶ Lymphoma,
  - ▶ Breast chancer,
  - ▶ Melanoma

# RATS AND RABBITS

- ▶ Rats
  - ▶ PK and PD studies
  - ▶ Various surgical models (rats)
    - ▶ Bone regeneration
    - ▶ Nerve wrap
    - ▶ Tendon wrap
  - ▶ Genetic studies
    - ▶ Breeding
    - ▶ Phenotyping
    - ▶ Behavioral
- ▶ Ocular and pk research in rabbits



# HORSES

- ▶ Data collection about for Icelandic horses
- ▶ Equine herpes virus (Institution of Experimental Pathology)
  - ▶ Epidemiology
- ▶ Efficacy studies
- ▶ Summer eczema in horses
  - ▶ Caused by bite of Culicoides
  - ▶ Affects exported horses
  - ▶ Conducted by Keldur
- ▶ Horse as blood donors (Keldur)





# SHEEP AND PIGS

- ▶ Surgical models
  - ▶ Bone regeneration
  - ▶ Wound healing
  - ▶ Dura mater grafting
- ▶ Sheep as blood donors
- ▶ Reusage of animals
  - ▶ Training for medical doctors
    - ▶ Non surviving exercises
    - ▶ Postmortem



# PROS AND CONS IN SMALL COMMUNITY

- ▶ Small nation - few people
- ▶ Expensive to import animals
- ▶ Housing
  - ▶ For small and large animal experiments
  - ▶ Owned by private company
- ▶ Low funding
  - ▶ grants
- ▶ Little support from government
  - ▶ The Academic Council of Animal Welfare
  - ▶ No full-time public employee



# PROS AND CONS IN SMALL COMMUNITY

- ▶ Personal network
  - ▶ "Somebody knows someone"
- ▶ Professionals
  - ▶ Vascular surgeons
  - ▶ Brain surgeons
  - ▶ Nerve surgeons
  - ▶ Plastic surgeons
- ▶ Opportunity for better connection to organizations abroad

