



Home Office

## NON-TECHNICAL SUMMARY

# Production of Genetically modified Animals (Service Provision)

### Project duration

5 years 0 months

### Project purpose

- (a) Basic research
- (b) Translational or applied research with one of the following aims:
  - (i) Avoidance, prevention, diagnosis or treatment of disease, ill-health or abnormality, or their effects, in man, animals or plants.

### Key words

Genetic Modification, Service, Mouse

## Retrospective assessment

| The Secretary of State has determined that a retrospective assessment of this licence is not required.

## Objectives and benefits

Description of the project's objectives, for example the scientific unknowns or clinical or scientific needs it's addressing.

What's the aim of this project?

Creation and importation of genetically modified mice for cancer research, diagnosis and treatment

**Potential benefits likely to derive from the project, for example how science might be advanced or how humans, animals or the environment might benefit - these could be short-term benefits within the duration of the project or long-term benefits that accrue after the project has finished.**

**What are the potential benefits that will derive from this project?**

To understand cancer cell gene mutation, initiation and development. Potentially to develop human cancer diagnosis and treatment.

**Species and numbers of animals expected to be used**

**What types and approximate numbers of animals will you use over the course of this project?**

Mouse

Total number in 5 years: 16,400

## Predicted harms

**Typical procedures done to animals, for example injections or surgical procedures, including duration of the experiment and number of procedures.**

**In the context of what you propose to do to the animals, what are the expected adverse effects and the likely/expected level of severity? What will happen to the animals at the end?**

The severity of the majority of animals used in this licence is mild, such as hormone dosing and transgenic breeding. Others are used as embryo recipients and Vasectomised males after surgery, which will experience a moderate severity. In some circumstance, a transgenic line has a moderate severity will be bred under this licence and those animals will be transferred to the user's licence as soon as possible after creation OR rederivation.

## Replacement

**State why you need to use animals and why you cannot use non-animal alternatives.**

Transgenic animals are the most reliable disease model for studying and developing treatment for cancer. All requests to create new lines had 3Rs assessed during their PPL applications.

## Reduction

**Explain how you will assure the use of minimum numbers of animals.**

Transgenic Service is keen to develop new transgenic technology to reduce the usage of animals. Now we are using CRISPR-CAS9 technology to produce GM animals more quickly and fewer animals are used.

## Refinement

**Explain the choice of species and why the animal model(s) you will use are the most refined, having regard to the objectives. Explain the general measures you will take to minimise welfare costs (harms) to the animals.**

Mice are widely used for cancer modelling and there are many lines already in existence. This licence enables us to create and import lines to study different types of cancer and genes.