
Overview

This standard covers the use of Genetically Altered (GA) animals in scientific research and includes the competencies required to support the production and maintenance of breeding colonies of GA animals.

You will be familiar with the background reasons and ethical considerations for using GA animals in scientific research, and have an understanding of aspects of breeding, maintenance, genetic monitoring and cryopreservation of laboratory colonies.

This standard is for animal technologists who support the production and maintenance of GA animals in Home Office designated establishments.

It is essential that you work strictly within the limits of the relevant project licence.

Performance criteria

You must be able to:

P1 use safe practices and appropriate personal protective equipment when carrying out scientific or technical activities

P2 maintain appropriate levels of hygiene and bio-security

P3 support the production of a line of GA animals from founder stock or first generation animals

P4 take samples for DNA analysis using the least invasive method appropriate for scientific analysis

P5 check the physical condition of the animals, their readiness for breeding, and prepare the animals in the appropriate manner

P6 maintain a colony of GA animals to meet the scientific requirements of a research project focusing on reduction in animal wastage

P7 maintain the health and condition of GA animals throughout their reproductive cycle

P8 maintain the health and welfare of animals by providing special care, vet prescribed treatments and any special dietary requirements as appropriate

P9 record and monitor environmental conditions suitable for species and report problems to the relevant person

P10 transport animals safely and securely to another location within establishment or externally and complete the relevant documentation when sending animals to scientists

P11 keep accurate and up to date records as required by relevant legislation and the organisation

P12 deal with waste safely and correctly in accordance with legislation

P13 conduct all activities within the provision of the project licence

P14 comply with legislation relating to the care and welfare of animals in a Home Office designated establishment

P15 carry out all work in accordance with relevant environmental and health and safety legislation, risk assessment requirements, codes of practice and company policies

Knowledge and understanding

You need to know and understand:

K1 the importance and correct use of personal protective equipment for scientific or technical activities

K2 the importance of maintaining appropriate levels of hygiene and bio-security and how this can be achieved

K3 definitions of: chromosome, gene, DNA, genotype, phenotype, homozygous, heterozygous, transgenic, wild type and founder stock

K4 the methods used to take samples for DNA analysis for the animals you are working with

K5 how to check animals and prepare animals prior to breeding

K6 the justification for using GA animals and the role of the Ethical Review Process (ERP) in cost benefit analysis

K7 principles of the 3Rs in relation to the production and maintenance of GA animals

K8 why it is necessary to genotype progeny and how to evaluate results

K9 possible reasons why genotyping results may not conform to expected mendelian ratios

K10 breeding animals to include selection of future breeding stock (FBS) from genotyping results

K11 the environmental and husbandry conditions required for breeding animals

K12 the importance of effective communication with scientists (internal and external) and colleagues when breeding and/or transporting animals

K13 the identification of any environmental concerns and reporting structure

K14 additional welfare considerations that may be required in breeding and maintaining GA lines

K15 reasons for cryopreservation and re-derivation in GA lines

K16 how to identify problems when managing a colony of GA animals, and what action must be taken

K17 legislation for transporting and packing animals and the use of relevant documentation,

K18 the requirements of the Animals (Scientific Procedures) Act 1986 in producing GA animals, relevant licences, codes of practice, humane end-points, severity limits, welfare score sheets

K19 the requirements under current health and safety legislation for maintaining and disposal of GMO animals, Genetically Modified Organisms (contained uses) Regulations 2000 and Environmental Protection Act 1990, including the use of risk assessments

K20 the provisions of the project licence

K21 your responsibilities for the care and welfare of animals in a Home Office designated establishment under relevant animal welfare legislation, European directives and UK codes of practice

K22 your responsibilities under relevant environmental and health and safety legislation, codes of practice and company policies

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Support the production and maintenance of Genetically Altered (GA) animals in a Home Office designated establishment LEGACY



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