

C-LAS.3

**TITLE: LABORATORY ANIMAL SCIENCE
 GENETICALLY MODIFIED ANIMALS**

CATEGORY AND VALUE: C - 10 CREDITS

NOTIONAL STUDY HOURS: 100

Candidates working towards the designated Certificate in Advanced Veterinary Practice (Laboratory Animal Science) will need to complete the following modules: A-Professional Key Skills, B-Clinical Key Skills, B-Laboratory Animal Science and three out of a choice of four C-Laboratory Animal Science modules. Candidates may substitute one of the C Laboratory Animal Science modules and replace it with one of the C- Animal Welfare, Science and Ethics modules.

LEARNING OUTCOMES

Please refer to the General guidance and Assessment for all Modules document.

ASSESSMENT STRATEGY FOR THIS MODULE

1. A case book of 4 case exposures not exceeding 300 words each. These cases should demonstrate, for example, the candidate's involvement in clinical assessment or investigation of phenotype in genetically-altered animals, advising on management of adverse phenotypes, advising on humane end points, advising on best-practice for obtaining tissue for genotyping.
2. One short communication-type report (up to 2000 words) relating to topics covered in the module. Examples may include identification and management of a phenotypic abnormality related to genetic alteration, establishment of a "passport" system for genetically-altered rodents, establishment of best-practice guidelines for colony management, genotyping etc, and establishment of a health-monitoring programme for immunosuppressed mice. The report should be formatted along the lines of a scientific paper, e.g.:
 - a. Introduction: background information, set stage for problem
 - b. Description of case/situation
 - c. Actions taken and outcome
 - d. Discussion: analysis of case; alternative strategies that could have been adopted, comparison to similar cases/situations in literature
3. A comprehensive literature review of a topic relevant to the module content (no more than 3000 words). Examples may include review of one or more genetic technologies utilised in biological/biomedical research (e.g. gene therapy, methods of genetic modification, methods of assisted reproduction in rodents), review of phenotyping profiles for genetically altered mice.

These submissions should be retained by the candidate and will be part of the submission of work for the final synoptic assessment for the full qualification.

MODULE CONTENT

At the end of the module, candidates should be able to/have knowledge of:

- Understand the basic glossary and use of terms.
- The potential of genetic technology for research into development, medical treatment, and disease susceptibility e.g. models, gene therapy, genomics, proteomics and metabolomics
- Methods of creating genetically modified and mutant rodents
- Management of transgenic and mutant rodent colonies as well as standard inbred, outbred and other genetically defined colonies, the with main focus on rodents and to include record keeping, genotyping, refinement of genotyping techniques, training of personnel
- Health & Welfare issues associated with genetic modification in rodents e.g. immunocompetence and its impact on health screening and disease diagnosis & monitoring, the uses of passports and benchmarking for colony managers
- Phenotyping genetically modified rodents e.g. methods available, importance of welfare assessment as well as other signs and behaviours, the use of passports
- The Law, Codes of Practice and Guidance in relation to genetically modified organisms