EUROPEAN COLLEGE

OF

VETERINARY

PHARMACOLOGY & TOXICOLOGY

(ECVPT)

INFORMATION BROCHURE FOR RESIDENTS AND THEIR SUPERVISORS

2019-2023

Contents

Chapter 1 - Introduction

The European College of Veterinary Pharmacology and Toxicology (ECVPT) is a veterinary specialty organisation. It was founded in 1997 as part of the programme for veterinary specialization in Europe, which had been encouraged by the Advisory Committee for Veterinary Training (ACVT). ECVPT operates in close cooperation with the European Association for Veterinary Pharmacology and Toxicology (EAVPT), from which it was founded.

The ECVPT aims to advance the quality of veterinary and related biological sciences and animal health care in Europe by enhancing the skills of veterinarians active in the fields of Veterinary Pharmacology and Toxicology.

The primary objectives of the ECVPT are to advance veterinary and related biological sciences and animal health care in Europe and increase the skills of those practising in this field by:

- establishing guidelines for post-graduate education and prerequisites to becoming a specialist veterinary pharmacologist and toxicologist;
- examining and authenticating veterinarians as specialists in veterinary pharmacology and toxicology to serve the veterinary patient, its owner and the public in general, by providing expertise in these disciplines;
- encouraging research and other contributions to knowledge related to veterinary pharmacology and toxicology and promoting communication and the dissemination of this knowledge.

The ECVPT includes the two-linked specialties of veterinary pharmacology and toxicology - both of which deal with the action of drugs and xenobiotics on the organism. The following Diplomate title is used: European Veterinary Specialist™ in Pharmacology and Toxicology. The specialist in veterinary pharmacology and toxicology will be functioning in an academic, governmental or industrial setting. The main part of his/her time (at least 20 hours per week) will be devoted to veterinary pharmacology and toxicology.

This document serves as both an Information Brochure and as the Bylaws of the college. None of the information in this document supersedes the constitution or General Bylaws of the ECVPT.

Chapter 2 - Requirements for admission to the college

General

To become a Diplomate of the European College of Veterinary Pharmacology and Toxicology (ECVPT) an applicant should:

- be licensed to practice veterinary medicine and surgery in the countries of the European Community or the European Free Trade Association, unless relieved of this obligation by the Board;
- have a satisfactory moral and ethical standing in the profession. Evidence of professional or legal misconduct, such as misrepresentation or convicted felony, may be sufficient reason to reject an application; and
- by the time of the certifying examination, have devoted at least forty-eight (48) months, after the date of graduation from veterinary school, to specific education, training, and practice in veterinary pharmacology and toxicology.

This 4-year period should usually be divided as follows:

- an internship of at least one (1) and in some instances at least two (2) years (see below) plus
- a Residency (standard or alternate) of at least three (3) years.

In exceptional circumstances, individuals who are internationally recognised in the field of veterinary pharmacology and toxicology may be permitted, at the discretion of the Board and in consultation with the Credentials Committee, to sit the general and certifying examinations without having followed the above mentioned prescribed training programme. The individual should be able to demonstrate that he/she is internationally recognised within the field (e.g. curriculum vitae, letters of support). Permission for the individual to sit the general and certifying examination is at the discretion of the Board in consultation with the Credentials Committee.

Internship

A first period (the 'Internship') that consists of either:

- one (1) year of full-time, specific training in veterinary pharmacology and toxicology (such as a Masters degree in pharmacology and toxicology or equivalent); or
- two (2) years working full-time in graduate degree studies at a university; or
- two (2) years working full-time in a veterinary specialist referral centre or in an animal health or human pharmaceutical company (e.g. in pharmaceutical R&D, regulatory affairs or pharmacovigilance).

The suitability of the training in this period shall be assessed by the ECVPT Credentials Committee at the time of application to become a Resident.

Residency

A second period (the 'Residency') of at least three (3) years of a postgraduate training programme that has been approved by the ECVPT Education Committee with the applicant spending at least seventy percent (70%) of his/her time (at least twenty four (24) months) under the direct supervision of a Diplomate of the ECVPT. There is a seven (7) year maximum time limit in which candidates must complete their training.

This period is designed to provide the Resident with an in-depth education in the science and state of the art practice of veterinary pharmacology and toxicology and their supporting disciplines. There shall be additional education in the related disciplines that should include fundamental and comparative pharmacology and toxicology, clinical pharmacology and toxicology, pharmacotherapy and pharmaco- and toxicovigilance, regulatory pharmacology and toxicology and public health (e.g. resistance, certain toxins).

It will also be possible to follow an alternate training programme. The total training duration of this programme should be at least similar to the total duration of a conventional Residency Programme. If the thirty six (36) month programme is not continuous, it must be arranged in blocks of no less than half a month per block, with a minimum total of four (4) months per year. There is a seven (7) year maximum time limit in which all candidates must complete their training.

The alternate training programme should be under the direct supervision and advice of an ECVPT Diplomate. The proposed programme must be approved by the ECVPT Education Committee before training can be started. The applicant will be responsible for setting up an alternate programme. All the requirements for the formal Residency Programme, including publications, presentation log, and activity log, should also be met for an alternate programme. It is stressed that alternate programmes are only approved for an individual and not for an institution.

Contribution to the discipline

The candidate is required to have made a significant contribution to veterinary pharmacology and toxicology, as demonstrated by publications and a high standard of proficiency in the specialty. The minimum requirements for publications are two original papers in veterinary pharmacology and toxicology in international, peer-reviewed scientific journals. For one of these papers the applicant must be the principal author; for the second, the applicant does not necessarily have to be the principal author. The Credentials Committee is responsible for evaluating the quality of the publications.

Examination

The candidate has to successfully pass the examination of the College and be certified by the Executive Committee as a European Veterinary Specialist™.

In exceptional circumstances, individuals who are internationally recognised in the field of veterinary pharmacology and toxicology may be permitted, at the discretion of the Board and in consultation with the Credentials Committee, to sit the general and certifying examinations without having followed the above mentioned prescribed training programme. The individual should be able to demonstrate that he/she is internationally recognised within the field (e.g. curriculum vitae, letters of support). Permission for the individual to sit the certifying examination is at the discretion of the Board in consultation with the Credentials Committee.

Chapter 3 - Residency programme in veterinary pharmacology and toxicology

Definition

A European College of Veterinary Pharmacology and Toxicology Residency Programme in veterinary pharmacology and toxicology is a training programme that has been approved by the Education Committee, allowing a graduate veterinarian ('Resident') to acquire in-depth knowledge of veterinary pharmacology and toxicology and their supporting disciplines under the supervision and guidance of a Diplomate of the European College of Veterinary Pharmacology and Toxicology ('Diplomate').

Aims and objectives

The general aims of the veterinary pharmacology and toxicology training programme are to:

- instruct the Resident in the science and practice of veterinary pharmacology and toxicology and the appropriate components of supporting biomedical science disciplines;
- provide the Resident with the opportunity to pursue career goals in teaching, research, consultancy, clinical or public services;
- promote a professional attitude and proficiency in the principles of drug discovery, drug development and rational use of drugs and xenobiotics of veterinary interest;
- promote a professional attitude and proficiency in the principles of protection of the consumer and of the environment with regard to the discipline; and
- develop a management style allowing effective leadership.

The specific objective of the residency is to train the veterinarian to be a Specialist. It is therefore useful to define what a Specialist is. The following list is not exhaustive but gives a broad outline.

DESIRABLE SKILLS AND KNOWLEDGE

The specialist should:

- be acquainted with the main current theories, principles and issues (scientific, technical and regulatory) of veterinary pharmacology and toxicology;
- be acquainted with the structure, objectives, approaches and issues of the veterinary profession and specifically with regard to the speciality;
- be acquainted with the social role of the specialist and specifically the responsibilities of the specialists with regard to their employers, co-workers, colleagues, regulatory authorities and public opinion; and
- develop scientific activities in order to contribute to the development of the discipline.

Knowledge and skills concerned with the general practice of the speciality

The specialist should be able to:

- recognize and work up any pharmacological or toxicological problems as they occur in the different possible settings of veterinary practice (e.g. individual patient, at herd level) and as related to the speciality;
- cooperate with specialists and colleagues in clinical disciplines to the benefit of the veterinary patient;
- contribute to methods in preventive medicine, veterinary toxicology, regulatory toxicology, the management of zoonoses and antimicrobial resistance, avoidance programmes for undesirable residues in feed and food materials;
- contribute to sustainable agriculture by promoting prudent use of veterinary drugs and related substances, in particular antimicrobials, pesticides and fungicides;
- contribute to national and international records and databanks providing knowledge of drug interactions, toxins (both natural and man-made), interactions of medicinal products and toxins with nutrients or any other compound in the animals' environment;

- recognize and work up pharmacological and toxicological problems as they occur during pre-marketing safety assessment, pre-clinical and clinical drug development and also after marketing authorization (pharmaco- and toxicovigilance);
- assess the well-being of animals under clinical and experimental conditions;
- perform and evaluate animal experiments under GLP/GCP conditions;
- be a member of ethics committees, institutional review boards, etc.

Knowledge and skills with regard to new scientific, technical and regulatory developments in veterinary pharmacology and toxicology

The specialist should be able to:

- recognize and work up emerging issues of clinical pharmacology, pharmacotherapy, and clinical toxicology (hazard identification);
- recognize (and follow up) new scientific and technical developments in the discipline;
- provide new concepts and opinions for therapeutic intervention (including prophylaxis, metaphylaxis and preventive measures) for diseased or intoxicated animals;
- contribute to teams working in the regulatory framework of European and International (VICH) harmonization towards drug licensing, pharmacovigilance, the evaluation of toxic substances (hazard identification, hazard characterization, exposure assessment, risk characterization); and
- contribute to teams working on surveillance and monitoring programs related to toxic and undesirable substances in the food chain.

Knowledge skills and personal characteristics concerned with working as a professional specialist

By his/her expertise, the specialist should have developed the self-confidence, self-criticism and sense of responsibility that are essential for practicing the speciality. This includes a high moral and ethical standard in the treatment and experimental usage of all animal species, and reliability and honesty in the provision of information to other parties.

Knowledge and skills concerning professional contacts and transfer of knowledge

As a future teacher, project leader/manager, professional consultant, regulatory agency reviewer or other, the specialist in veterinary pharmacology and toxicology should be able to:

- express thoughts and concepts clearly, in oral as well as written form;
- approach problem solving in an analytical and scientific way and be able to assign priorities to these solutions;
- develop an appropriate management style for planning, organizing, managing, reviewing and controlling projects;
- develop interpersonal and communication skills which facilitate interaction with a range of different people from widely different backgrounds;
- develop effective team leadership skills of project teams as evidenced by the ability to motivate others.

Knowledge and skills indirectly related to the speciality and/or facilities

The specialist should:

- keep abreast of new developments within the veterinary profession both within and outside the speciality;
- understand the limitations of his/her own speciality in the perspective of the veterinary profession;
- understand the possibilities for ECVPT specialists to interact with specialists in other areas and vice versa;
- be familiar with the potential for multidisciplinary cooperation;
- understand and practice evidence-based medicine.

In order to achieve these goals, and to establish the training programme, the ECVPT Executive Committee is guided by the following criteria:

- A registered specialist shall spend most of his/her working time working at specialist level in academia, public service or industry;
- The training programme has been established in consideration of those of parent disciplines (veterinary science, pharmacology (International Union of Pharmacology, IUPHAR) and toxicology (International Union of Toxicology, IUTOX));
- The training programme should be of a similar breadth and quality to those developed elsewhere (e.g. USA, Australia), which allow inclusion of other training or experience, thus enabling mutual recognition of specialist registration in future;
- A registered specialist should practice/work in an academic environment or a private company, in a laboratory, a hospital or a national or international institution with adequate facilities for the specialty.

Training programme description

A Veterinary Pharmacology and Toxicology Residency Programme ('Programme') shall consist of a period of at least three (3) years of supervised training and postgraduate education, in the science and practice of veterinary pharmacology and toxicology and their supporting disciplines, or equivalent (as defined by the ECVPT Credentials Committee), under the supervision of at least one (1) Diplomate who participates actively in that programme.

Basic training

Prospective Residents will be required to have a broad training and experience in veterinary pharmacology and toxicology and their supporting disciplines, which must be attained by participation in an internship of at least twelve (12) months duration. The internship will be assessed by the ECVPT Credentials Committee at the time of application for the residency. The internship must be approved for the application to be successful.

Programs should meet the requirements for each of the three (3) categories listed below.

i. Period of Training

The internship programme should consist of at least one (1) year and in some instances at least two (2) years of experience (see below) in veterinary pharmacology and toxicology (full time, at least a thirty-five to forty (35-40) hour working week).

The internship programme should consist of at least one of the following:

- at least one (1) year of full-time specific training in veterinary pharmacology and toxicology (such as a Masters degree in pharmacology and toxicology or equivalent);
- at least two (2) years working full-time in graduate degree studies at a university in a field related to veterinary pharmacology and/or toxicology;
- at least two (2) years working full-time in a veterinary specialist referral centre or in an animal health or human pharmaceutical company (e.g. in pharmaceutical R&D, regulatory affairs or pharmacovigilance) or in environmental toxicology or toxicovigilance either in public service or the biotechnology or chemical industries.

ii. Conditions of training

It is preferred that the internships should be under the direct supervision of at least one ECVPT Diplomate.

As well as veterinary pharmacology and toxicology, the programme should include additional appropriate topics (e.g. fundamental and comparative pharmacology and toxicology, clinical pharmacology and toxicology, pharmacotherapy, pharmaco- and toxicovigilance, epidemiology and quantitative exposure assessment as well as regulatory toxicology and public health (e.g. resistance, certain toxins)).

iii. Documentation of Training

The programme should document for each intern the dates on which the period of training commenced and ended, and the name of the supervisor. A certificate of internship and/or a cover letter signed by the supervisor are sufficient.

If a candidate's programme does not meet these general guidelines, the candidate will submit a description of his/her internship programme to the appropriate residency training committee.

Graduate degree studies

Graduate degree studies may be included in the Programme. However, at least fifty per cent (50%) of the time in the combined graduate degree-Residency Programme must be allocated to the Residency Programme in veterinary pharmacology and toxicology. There is no reduction in any requirement for certification as a European Veterinary Specialist™ for applicants who combine their residency with a graduate degree programme.

Continuing education programmes

Continuing education programmes as the sole method of training will not meet the requirements for certification as a European Veterinary Specialist™.

Participation of Diplomates of the European College of Veterinary Pharmacology and Toxicology in the veterinary pharmacology and toxicology Residency Programmes

- Each Programme must be supervised by at least one (1) Diplomate of the ECVPT.
- One ECVPT Diplomate may supervise up to three (3) Residents concurrently provided that his/her organization has an approved training programme in pharmacology and toxicology.
- The director of the Residency Programme ("Programme Director") shall be responsible for the administration and continuity of the Programme. The Programme Director must be a Diplomate of the ECVPT.
- Each Resident must be assigned a Resident Advisor by the Programme Director within the first three (3) months of their Programme. The Resident Advisor shall be responsible for the administration and evaluation of the general and specific programme requirements for the Resident. The Resident Advisor must be a Diplomate of the ECVPT.
- The Programme Director and Resident Advisor may be the same individual.

Evaluation of the Resident

Residents must meet with their Resident Advisor at least two (2) times per year for evaluation of performance and progress. The Resident Advisor should keep short written reports of these meetings, which must have been signed by both the Advisor and the Resident. An update report, signed by the Resident, must be submitted once a year by the Resident Advisor to the Education and Residency committee by August 1st.

Intention to sit the general and/or certifying examinations

All applicants intending to sit the general and/or certifying examinations or any part thereof in any given year must complete and return the form 'Intention to Sit Examinations' (http://www.ecvpt.org/index.php?option=com_content&view=article&id=26&Itemid=63). Submission of this form will ensure that the potential candidate receives all of the necessary information in relation to the credential requirements and the examinations. Completion of this form does not commit the potential candidate to taking the examination in that year. The completed and signed form should be sent to the ECVPT secretary (info@ecvpt.org) by February 1st.

Application for certification as a European Veterinary Specialist™

The Resident may submit an application to determine eligibility for certification as a European Veterinary Specialist™ by examination providing that they have completed at least thirty-four (34) months of their Residency programme by the time of the certifying examination in the year that they are due to sit the certifying examination. Applications should be sent to the Secretary of the ECVPT by the application deadline (see Chapter 4 for full details).

Specific Programme description: Learning Objectives. The goal of the ECVPT Residency Programme is to train Veterinary Graduates so that they acquire necessary skills, knowledge and aptitudes to become specialists in Veterinary Pharmacology and Toxicology in an academic or commercial environment primarily in the EU.

During the residency, it is recommended that each candidate rotates between different training divisions and units (including: statistics, basic epidemiology, clinical departments,

laboratory animal units and basic science pharmacology) focussing on their specialties. This training shall be under the guidance of, and in collaboration with, experienced specialists in the respective areas.
At least twenty four (24) months of the three (3) year programme must be spent in veterinary pharmacology and toxicology under the direction of an ECVPT Diplomate.

- Residents are required to do a minimum of a 6-week research project, which may be separated into 2-week blocks. The purpose of the project is to learn principles of experimental design. It is suggested that the research project is conducted after the Resident has covered statistics, basic epidemiology and basic laboratory research.

- Residents shall be directly supervised when they follow individual training programmes. In this context direct supervision means that the Resident must personally discuss his/her activities with the supervising Diplomate. The Diplomate may only be off site (e.g. attending a congress) for four (4) consecutive weeks without arranging for another Diplomate to act as a supervisor in his/her place. Exceptions to the direct supervision requirement must be agreed in advance by the Education & Residency Committee.

- The Resident shall be responsible for:

    - Acquiring and using skills in general and applied pharmacology and toxicology;

    - Acquiring and using skills in methods and techniques applied in pharmacology and toxicology and their supporting specialties;

    - Participating in veterinary pharmacology and toxicology teaching (minimum of 5 lectures on different topics and of minimum total duration of 4 hours); and
      preparing original work for publication as first author and contributing author.

- If the thirty six (36) month training programme is not continuous, it must be arranged in blocks of time no less than half a month per block and a minimum total of four (4) months per year. There is a seven (7) year maximum time limit in which candidates must complete their training.

SUBJECT AREA LEARNING OBJECTIVES

More than 70% of the subject areas described in the learning objectives listed below should to be studied at a major level. It is recognized that the level of training and knowledge in different subject areas may vary and that some residents will have a detailed knowledge and interest in some areas but will have less need to pursue other areas to the same depth.

Basic veterinary pharmacology and toxicology: The Resident shall, in answers to written examination questions, be able to correctly explain, restate or discuss the principles, as they apply to veterinary medicine, of:

- Basic and molecular pharmacology and toxicology, including principles of:
- Mechanisms of action (pharmacodynamics);
- Dose-response relationships;
- Pharmacokinetics;
- Toxicokinetics;
- Toxicodynamics;
- Pharmacokinetic/pharmacodynamic modelling;
- Population (Non-linear mixed effects) modelling
- Antimicrobial resistance mechanisms; and
- Antimicrobial susceptibility testing.

Regulatory veterinary-pharmacology and -toxicology: The Residents shall, in answers to written exam questions, be able to correctly explain, restate or discuss the principles of:

- Risk assessment: hazard identification, hazard characterization, quantitative exposure assessment and risk assessment for the target animals, the users, the consumers and the environment, by a basic knowledge of the regulatory bases as described in guidelines published by EMA and international agencies (e.g. OECD and VICH guidelines), including common experimental models in acute

and chronic toxicity testing, reproductive and endocrine toxicology, immunotoxicity, genotoxicity and carcinogenicity, microbiological endpoints, environmental toxicology;

- Basic principles in analytical chemistry (liquid chromatography coupled with mass spectrometry, radio-immuno assays, full-scan MS, radio-HPLC and radio-TLC) and their validation to detect and/or quantify drugs and their metabolites, toxins or xenobiotics in the environment, in animal feeds, and in animal body fluids and tissues;
- Basic knowledge on the synthesis, use and analytical methods related to radiolabelled substances (application to metabolism and tissue depletion kinetic studies);
- Legal and regulatory principles related to veterinary drug field use, including prescriptions, off-label use and controlled substances;
- Pharmaco- and toxicovigilance rules for veterinary drugs in the EU;
- Basic knowledge in the principles of OECD Good Manufacturing Practice (GMP), Good Clinical Practice (GCP), Good Laboratory Practice (GLP) rules;
- Experimental bases to design and conduct experiments needed to determine MRLs (based on comparative metabolism and tissue distribution) and tissue depletion (marker residue kinetics) to establish withdrawal periods;
- The legal requirements and regulatory evaluation as relates to toxic agents (including disinfectants and pesticides) and chemicals, including definitions of use (precautionary measures, environmental risks, industrial and occupational health risks).

Chemical Classes: The Residents shall, in answers to written exam questions, be able to correctly explain, restate or discuss the properties of:

- The different classes of drugs affecting the central and peripheral nervous systems.

- The different classes of drugs and toxic agents used in pain control and anaesthesia, including general and local anaesthetics, sedatives, tranquillisers and drugs acting at the neuromuscular junction.
- The different classes of drugs of anti-inflammatory, antipyretic and analgesic agents.
- The different classes of drugs of antimicrobial, antifungal and anti-parasitic agents, and resistance to antimicrobial and anti-parasitic agents.
- The different classes of drugs of anti-neoplastic agents used in veterinary medicine.
- The different classes of drugs affecting the blood, blood-forming organs and the immune system.
- The different classes of drugs affecting the cardiovascular system, urogenital system and renal function.
- The different classes of drugs affecting endocrine systems, including hormones and hormone-like compounds.
- The different classes of drugs affecting the gastrointestinal system (including the liver and pancreas).
- The different classes of drugs affecting the respiratory system.
- The different classes of drugs affecting the skin (systemic and topical).
- The different classes of drugs affecting the eye (systemic and topical).
- Vitamins and minerals as therapeutic agents.
- Natural toxins: phytotoxins, phycotoxins and mycotoxins.
- Persistent organic environmental pollutants (such as dioxins, polychlorinated).
- Biphenyls (PCBs), persistent organic pollutants (POPs) and related compounds.
- Pesticides, including insecticides, herbicides, fungicides, rodenticides and related compounds.
- Radioactive compounds.

Techniques: The Residents shall, in answers to written exam questions, be able to correctly explain, and develop suitable plans using the techniques of:

- Evidence-based veterinary medicine;
- Experimental design, including the design and statistics for preclinical and clinical trials, toxicological and epidemiological studies and exposure studies;
- Detection and measuring drugs, toxins and their metabolites in animal body fluids and tissues and the environment;
- Molecular biology, genomics, proteomics, metabolomics and pharmaco- and toxicogenetics;
- Pharmaco- and toxico-epidemiology.

Principles of Determination of dose regimens: The Residents shall, in answers to written exam questions, be able to correctly explain, restate or discuss the principles of:

- Clinical pharmacology including the effects of disease on drug disposition,
- Drug-drug interactions,
- Bayesian techniques for establishing and adapting dosage regimens,
- Interspecies dosage scaling.

General abilities (soft skills) required by successful residents: The Residents shall, in their written request and submission for examination and acceptance for the final written Diploma examination provide written evidence of being able to demonstrate:

- Skills at problem solving in an analytical and scientific way, formulate hypotheses, assign priorities and gather additional evidence to make proposals or recommendations,
- Project management skills for planning, organizing, managing, reviewing and controlling projects,
- Competent interpersonal and communication skills to facilitate interactions with a range of people from diverse backgrounds
- The practice of the principles of effective team work.

Residents commitments

Before starting his/her Residency Programme each Resident must sign a Commitment letter, as described in the application form.

Suggested reading list

The following list contains references the Examination Committee suggests for use in preparation for the examination. The source of questions is not necessarily limited to this reference list (in some cases, an updated version may have been published since this list was established).

Reading list

- Antimicrobial Therapy in Veterinary Medicine. 4th Revised Edition. Giguere S, Prescott JF, Baggot JD, Walker RD, Dowling PM. Ames: Iowa State University Press, 2007.
- Casarett and Doull's Toxicology: The Basic Science of Poisons, 7th Revised Edition. Klaassen CD. (Ed) Europe McGraw-Hill Medical, 2008.
- Clinical Pharmacokinetics: Concepts and Applications, 4th Edition Rowland M, Tozer TN. Lippincott Williams & Wilkins, 2010.
- Comparative and Veterinary Pharmacology, Handbook of Experimental Pharmacology, Volume 199. Cunningham F, Elliott J, Lees P. Springer, 2010. Comparative pharmacokinetics: principles, techniques, and applications, 2nd Edition. Riviere JE. Ames: Iowa State Press, 2003.
- Current Veterinary Therapy: Food Animal Practice, 5th edition. Anderson DE, Rings M. (Eds) Philadelphia: WB Saunders, 2009 (and drug therapy sections in previous editions)
- Goodman & Gilman's The Pharmacological Basis of Therapeutics, 12th Edition. Brunton L, Chabner BA, Knollman B. New York: McGraw-Hill, 2010.
- Pharmacokinetics. Gibaldi M, Perrier D. New York: Marcel Dekker, 1982.
- Veterinary Pharmacology and Therapeutics, 9th Revised Edition. Riviere JE, Papich MG. Ames: Iowa State University Press, 2009.
- Veterinary Toxicology. Gupta RC. Elsevier Science Publishing Co Inc Academic Press Inc, 2007.

Supplementary reading list

- Basic and Clinical Pharmacology, 11th Edition. Katzung, B, Masters S, Trevor A. (Eds) McGraw-Hill: New York, 2009.
- Current Therapy in Equine Medicine, 6th Revised Edition. Robinson NE, Sprayberry KA. (Eds) Elsevier - Health Sciences Division Saunders, 2008.
- Handbook of Veterinary Pharmacology, 2nd Edition. Hsu WH. Shinilbooks Company, 2013.
- Katzung & Trevor's Pharmacology Examination and Board Review, 9th Edition. Trevor A, Katzung B, Masters S. Mc-Graw Hill: New York, 2010.
- Kirk's Current Veterinary Therapy XIV. Bonagura JD, Twedt DC. (Eds) Elsevier Saunders, 2008. (and drug therapy sections in previous editions)

In addition, the resident might find it valuable to consult different formularies for veterinary drug formulations.

Recommended Websites

For Guidelines, position papers, summary reports etc.

FDA : http://www.fda.gov/

European Medicines Agency: http://www.ema.europa.eu/

VICH: http://vich.eudra.org/

EFSA : http://efsa.europa.eu/

Recommended journals

Candidates are also encouraged to read relevant articles published in reputable journals in the 3 years before sitting the examination.

Of special relevance are:

- Journal of Veterinary Pharmacology and Therapeutics
- Toxicology and Applied Pharmacology

- BMC Veterinary Research (pharmacology section)
- The Veterinary Journal (pharmacology related articles)
- Veterinary Clinics of North America (reviews)

- Supplementary reading list
- Research in Veterinary Science
- British Journal of Pharmacology
- Journal of Pharmacology and Experimental Therapeutics

Seminal Review Papers

In some subject areas key articles may have been published more than 5 years ago. A list of these key articles is provided on the ECVPT website. For example, here are some selected examples of suitable articles in pharmacokinetics and pharmacodynamics.

In the Journal of Veterinary Pharmacology and Therapeutics; 2004 - Issue 27(6):

- Plasma clearance. Toutain PL, Bousquet-Mélou A. J Vet Pharmacol Ther. 415-425.
- Plasma terminal half-life. Toutain PL, Bousquet-Mélou A., J Vet Pharmacol Ther. 427-439.
- Volumes of distribution. Toutain PL, Bousquet-Mélou A. J Vet Pharmacol Ther. 441-453.
- Bioavailability and its assessment. Toutain PL, Bousquet-Mélou A. J Vet Pharmacol Ther. 455-466.
- Integration and modelling of pharmacokinetic and pharmacodynamic data to optimize dosage regimens in veterinary medicine. Toutain PL, Lees P. J Vet Pharmacol Ther. 467-477.
- Pharmacodynamics and pharmacokinetics of nonsteroidal anti-inflammatory drugs in species of veterinary interest. Lees P, Landoni MF, Giraudel J, Toutain PL. J Vet Pharmacol Ther. 479-490.

- PK-PD integration and PK-PD modelling of nonsteroidal anti-inflammatory drugs: principles and applications in veterinary pharmacology. Lees P, Giraudel J, Landoni MF, Toutain PL. J Vet Pharmacol Ther. 491-502.
- Pharmacokinetics and pharmacokinetic/pharmacodynamic relationships for angiotensin-converting enzyme inhibitors. Toutain PL, Lefèbvre HP. J Vet Pharmacol Ther. 515-525.

In the British Journal of Pharmacology; 2007 - Issue 152:

- Lew MJ (2007). Good statistical practice in pharmacology: problem 1. Br J Pharmacol. 295–298.
- Lew MJ (2007). Good statistical practice in pharmacology: problem 2. Br J Pharmacol. 152: 299–304.

In the Journal of Veterinary Pharmacology and Therapeutics; Series on the use of pharmacokinetic modeling principles in Animal Health:

- Riviere JE, Gabrielsson J, Fink M, Mochel J. Mathematical modeling and simulation in animal health. Part I: Moving beyond pharmacokinetics. J Vet Pharmacol Ther. 2016 Jun;39(3):213-223.
- Lin Z, Gehring R, Mochel JP, Lavé T, Riviere JE. Mathematical modeling and simulation in animal health - Part II: principles, methods, applications, and value of physiologically based pharmacokinetic modeling in veterinary medicine and food safety assessment. J Vet Pharmacol Ther. 2016 Oct;39(5):421-438.
- Bon C, Toutain PL, Concordet D, Gehring R, Martin-Jimenez T, Smith J, Pelligand L, Martinez M, Whittem T, Riviere JE, Mochel JP. Mathematical modeling and simulation in animal health. Part III: Using nonlinear mixed-effects to characterize and quantify variability in drug pharmacokinetics. J Vet Pharmacol Ther. 2018 Apr;41(2):171-183.

Time

Residents must spend fifteen to twenty per cent (15-20%) of their programme in each of the following ways:

- Active research (general practical work)
- Preparation of scientific manuscripts
- Graduate degree studies

External veterinary pharmacology and toxicology rotations, with the approval of the Resident Advisor, are recommended as they facilitate development of knowledge, skills and proficiency through exposure to a wide variety of scientific, technical and regulatory problems. This can be at an academic institution or pharmaceutical company or equivalent, or in a regulatory environment.

Conferences

- The Resident is required to attend "in house" scientific, technical and/or regulatory meetings and keep a log-book of attendance.
- The Resident is required to participate in national and international training courses in veterinary pharmacology and toxicology and keep a log book of attendance.
- The Resident is encouraged to attend courses organized by the ECVPT such as workshops on pharmacokinetics, pharmacokinetic/pharmacodynamic modelling, antibiotics, natural toxins, etc. Equivalent teaching programmes may also be acceptable if these include practical work or a certification system. A log book of attendance should be kept.
- The Resident is encouraged to attend EAVPT conferences.

The following conferences (the list is not exhaustive) are recommended for attendance:

- National training programmes in pharmacology and toxicology
- Veterinary internal medicine conferences;
- Veterinary anaesthesiology and intensive care conferences;
- Veterinary parasitology conferences;

- Antimicrobial use and resistance conferences;
- Scientific journal clubs;
- Other scientific presentations, including human pharmacology and subject/specific toxicology conferences; and
- Conferences of pharmacology and toxicology societies (e.g. British Pharmacological Society (BPS), American Academy of Veterinary Pharmacology and Therapeutics (AAVPT), American College of Veterinary Clinical Pharmacology (ACVCP), Population Approach Group in Europe meeting (PAGE), IUPHAR, IUTOX, Society of Toxicology (SOT)).

Resident Activity Log

A Resident Activity Log listing teaching, rotations, and conferences, workshops, seminars and lectures attended must be maintained by the Resident.

Resident Presentation Log

The Resident must maintain a Resident Presentation Log listing presentations given at veterinary pharmacology and toxicology conferences and other relevant professional meetings.

During the programme the Resident should undertake the following:

- A minimum of one (1) oral presentation presented at a national or international congress.
- A minimum of six (6) seminars during the Programme. For the purposes of the programme, a seminar is defined as a scientific presentation to veterinarians, which is followed by a discussion period.
- Regular presentations at in-house working meetings.

All presentations should be recorded in the individual Presentation Record.

Research and publications

Research

The Resident must complete a project that contributes to the advancement of veterinary pharmacology and toxicology. A detailed project description needs to be presented.

Publications

The Resident should publish at least two (2) original veterinary pharmacology and toxicology papers in a scientific journal. The Resident must be the first named (i.e. principal) author of one of these papers. The applicant does not necessarily have to be the principal author of the second and subsequent papers.

If any of the papers are published in a journal that does not appear in the Citation Index, a letter must be attached from the editor of the journal indicating that it is a peer-reviewed, internationally distributed journal. If any of the papers are published in a language other than English, an English abstract must be provided with the application.

Teaching responsibilities

The Resident is required to participate in the education of graduate veterinarians and/or students of veterinary medicine. This may include formal lectures to students, workshops and seminars, which should be recorded in the Presentation Log.

Documentation and verification of Veterinary Pharmacology Residency Programme

The Programme Director, Resident Advisor, and Resident each have separate responsibilities for the documentation and verification of the satisfactory training of the Resident.

The Resident Activity and Presentation logs documenting the extent of the training must be submitted by the Resident annually with the update report from the Resident Advisor. The Resident Activity logs will also be aggregated by the Resident to be submitted at the time of application to the Credentials Committee before sitting the College examination.

Programme Director

The Programme Director is responsible for:

- Verification of pre-residency training, and presence of suitable veterinary pharmacology and toxicology facilities, equipment, and supplies within thirty (30) days of programme initiation;
- Distribution of the documentation and verification forms to each Resident annually; and
- Notification of the ECVPT Secretary of any changes in the programme (including changes in personnel) approved originally by the Education Committee.

Resident Advisor

The Resident Advisor is responsible for:

- Undertaking semi-annual progress and performance appraisals of the Resident;
- Verification of the Resident Activity Log;
- Verification of the Resident Presentation Log; and
- Writing an annual report on the Resident based on the Resident Activity and Resident Presentation Logs, signed by both the Resident and the Resident Advisor. These must be sent to the Residency and Education committee by the first of August of each year.

The Resident Advisor is responsible for the evaluation of the Resident's progress and will inform the Resident of any deficiencies. The Resident Advisor or Resident should advise the Education Committee of any deficiencies in the training programme.

Resident

The Resident is responsible for:

- Maintaining the Resident Activity Log;
- Maintaining the Resident Presentation Log;
- Documenting external training;
- Providing an annually-updated curriculum vitae to the Resident Advisor and Programme Director; and
- Submitting copies of the updated Resident Activity and Resident Presentation Log to the Resident Advisor by July 1st of each year.

Facilities, services, and equipment required for a European College of Veterinary Pharmacology and Toxicology approved veterinary pharmacology and toxicology Residency Programme

Facilities for training are recognized by the College (a list of acknowledged training facilitates is presented on the College website). The following facilities need to be available for candidates who are not at one of the recognized training centres:

- A library providing access to current journals relating to pharmacology and toxicology and their supporting disciplines, and containing relevant standard textbooks.
- A personal working space for the Resident, including computer and online facilities.
- Other research facilities and technical equipment at the institution need to be described, together with the training programme, if the training is not followed in one of the recognized institutions.

Alternate programme

It will also be possible to follow an alternate training programme. The length of this programme should be at least similar to the total length of a conventional Residency Programme. If the thirty six (36) month programme is not continuous, it must be arranged in blocks of no less than half a month per block, with a minimum total of four (4) months per year. There is a seven (7) year maximum time limit in which candidates must complete their training.

The alternate training programme should be under the direct supervision and advice of an ECVPT Diplomate. The proposed programme must be approved by the ECVPT Education Committee before training can be started. The applicant will be responsible for setting up an alternate programme.

All the requirements for the formal Residency Programme, including publications, presentation log, and activity log, should also be met for an alternate programme. It is stressed that alternate programmes are only approved for an individual and not for an institution.

Chapter 4 - Application procedure for ECVPT examinations

General examination

Applicants must complete the form confirming their intention to sit the examination by email to the ECVPT Secretary by four (4) months before the date of the anticipated examination – for example, if the examination is anticipated for July 1st in any given year then the application should be received before March 1st of that year. The deadline for credentials submission is February 1st. There are no further credentialing requirements for the general examination. The examination fee must be paid by June 1.

Certifying examination

Applicants must submit one (1) copy (pdf format) of their credentials by email to the ECVPT Credentials Committee chairperson three (3) months before the date of the anticipated examination – for example, if the examination is anticipated for July 1st in any given year then the application should be received before April 1st of that year. The requirements (see Requirements for admission) must be met at the time the application is due. Incomplete applications will not be processed or reviewed.

All candidates must submit the Intention to Sit the Examination form together with all other required documents and examination fees. The candidate's credentials should verify the successful completion of a ECVPT standard or alternate residency training programme.

The responsibility for accuracy and availability of all required credentials rests with the Resident and his/her Programme Director.

The following materials must be submitted:

1. Cover letter detailing contents of application.
2. Completed Application Form - available from www.ecvpt.org
3. A Curriculum Vitae.

4. A scanned copy of an original, signed letter from the Programme Director and Resident advisor(s) of each institution involved in the residency training programme must accompany each copy of the application. All letters must be from persons familiar with the candidate's postgraduate training programme. Residents are reminded to submit requests for reference letters from Programme Director and advisors in a timely fashion. A letter may also be emailed directly to the ECVPT Credentials Committee chairperson with any confidential comments at least three (3) months before the date of the anticipated examination.

Reference letters must document all of the following:

- The candidate's residency training programme has previously been registered with the College and has been approved by the Education & Residency Committee.
- Verification of the veterinary pharmacology and toxicology training programme and level of supervision.
- The candidate has successfully completed at least thirty-three (33) months of an approved Residency Programme by the deadline for application for the examination.
- The candidate completed their primary veterinary qualification at least forty-eight (48) months prior to the deadline for application for the examination.
- The Resident's proficiency, judgement, and competence as a specialist and academic readiness to sit the examination.
- The commitment of the Resident to the objectives of the ECVPT.
- The moral and ethical standing of the Resident within the veterinary profession.

5. One passport-sized photograph (as a JPG or TIF format) should be sent with the application.

6. Documentation Forms

The following completed and verified forms must accompany each copy of the application:

a) Activity Log

b) Presentation Log

c) Short written reports

The following must accompany each copy of the application - See Requirements for Admission and Guidelines for Reports in Appendix A for further information.

Short written reports

Submission of short written reports of five (5) problems handled, and written up by the candidate that give an impression of the analytical approach of the candidate. The short written reports should demonstrate that the candidate has attained specialty level. The reports should be written using a problem-oriented approach. Each short written report should be around 1500 (±15%) words. The number of words (excluding addenda) should appear on the first page.

Candidates who submit five (5) short written reports with a total number of words greater than 7500 words, not including tables, figures and references may lose marks or be rejected immediately and not further considered by the Credentials Committee.

Guidelines for writing these short reports are presented in Appendix A.

All reports will be assessed by three (3) reviewers. Two (2) out of the three (3) reviewers must approve the report to be compliant with the requirements. Four (4) out of five (5) cases must be accepted.

Original papers

At least two (2) original papers on veterinary pharmacology and toxicology published in a scientific journal. The applicant must be the principal (first-named) author of one (1) of these papers. The applicant does not necessarily have to be the principal author of the second and subsequent papers.

The publications must be published or accepted for publication without further amendment. Letters of acceptance and copies of accepted manuscripts are required. Letters of acceptance that include requests for minor changes are not acceptable – these changes must be made and the paper accepted in full at least three (3) months before the examination.

If any of the papers are published in a journal that does not appear in the Citation Index a letter must be attached from the editor of the journal indicating that it is a peer-reviewed

internationally distributed journal. If any of the papers are published in a language other than English then an English abstract must be provided with the application.

The application materials must be divided and arranged in the sequence listed, then indexed and securely bound to prevent loss and to facilitate review. The applicant's name should be on the front of each copy of the application.

If the credentials are accepted by the Credentials Committee and approved by the Executive Committee, the applicant will be notified by the ECVPT Secretary. The Examination Committee will notify successful applicants of the dates and procedure of examination.

Unsuccessful applicants will be notified at the same time by a letter explaining the deficiencies in credentials.

All correspondence regarding the application procedure and notification should be addressed to the ECVPT Secretary. All submitted application materials become the sole property of the ECVPT and may be retained or destroyed after the examination. In no circumstances will they be returned to the applicant.

Exceptional circumstances

In exceptional circumstances, individuals who are internationally recognised in the field of veterinary pharmacology and toxicology may be permitted, at the discretion of the Board in consultation with the Credentials Committee, to sit the certifying examinations without having followed the above mentioned prescribed training programme. The individual should be able to demonstrate that he/she is internationally recognised within the field (e.g. curriculum vitae, letters of support). Permission for the individual to sit the certifying examination is at the discretion of the Board in consultation with the Credentials Committee.

Examination fees

The fees may be changed at the discretion of the Executive Committee. The fees for 2019 are as follows and are due before 1st June:

- General examination 500 Euro

- Certifying examination 1000 Euro
- General and certifying 1500 Euro
- Re-examination (certifying or general plus certifying examinations) 500 Euro
- Re-examination (general examination) 250 Euro

The fee payment form should be sent to the ECVPT Treasurer. There is no requirement to include this form with the credentials. No application will be evaluated or processed, and no examination entry will be permitted if the fee has not been paid to the college.
Note that:-
a. The examination fees are refundable before 14th June if the candidate wishes to postpone the examination for whatever reason.

b. The examination fees are only refundable after 14th June if the candidate is unable to attend the examination on grounds of serious ill-health or personal circumstances. This is at the discretion of the Executive Committee and is not automatic.

Reapplication

Candidates whose application to take the Examination is rejected by the Credentials Committee may reapply by the deadline of three (3) months before the examination date in a subsequent year in which the examination is to be taken. The application materials must be presented in the same manner as previously described.

Examination

Applicants must submit four (4) full copies of their credentials to the ECVPT Credentials Committee chairperson three (3) months before the date of the anticipated examination – for example, if the examination is anticipated for March 1st in any given year then the application should be received by December 1st of the preceding year. Each copy must be securely bound and numbered. The requirements (see Requirements for admission) must be met at the time the application is due. Incomplete applications will not be processed or reviewed.

The following materials must be submitted by all applicants (four (4) copies):

1. Cover letter detailing contents of application.
2. Complete Application Form - available from www.ecvpt.org
3. An updated curriculum vitae: an addendum should report training and experiences directed toward correcting the deficiencies as noted by the report from the Executive Secretary.
4. Resubmission of the items that were found to be deficient in the previous application suitably revised.
5. One passport-sized photograph (or digital files in JPG or TIF format).
6. Certifying examination fee (which should be sent to the ECVPT Secretary).
7. An updated letter with an original signature (plus three (3) copies) from the Resident's supervisors (if the Resident has not completed their Residency Programme), or any ECVPT Diplomate who knows him/her (if the Resident has completed their Residency Programme), attesting to the following:
    i. the applicant's readiness to sit the examination;
    ii. the commitment of the applicant to the constitutional objectives of the ECVPT;
    iii. the moral and ethical standing of the applicant within the veterinary profession;
    iv. the candidate's completion of any training and experiences directed toward correcting the deficiencies as noted by the report from the Executive Secretary.

    All pertinent correspondence (four copies) should be provided. This should include a list of all dates of previous applications and appropriate correspondence.

Repeat Examinations

A candidate must pass each section of the examination in order to become a Diplomate. Failure to pass all parts of the examination within eight (8) years of first sitting will prevent the candidate from becoming a Diplomate. The number of attempts at the examination is limited to four (4).

Candidates who wish to repeat the examination should submit the following by April 1st of the year in which the examination is to be taken:

1. A completed application form (one (1) copy in PDF format).

2. An up to date curriculum vitae (one (1) copy in PDF format) should be provided.

3. All pertinent correspondence (one (1) copy in PDF format) should be provided. This should include a list of all dates of previous applications and appropriate correspondence.
4. One (1) passport sized photographs (in JPG or TIF format).

5. Examination fee (which should be sent to the ECVPT Treasurer and not included in the application). The examination fee should be paid to the ECVPT indicating the family name of the Resident and must be received by the college by the specified deadline in the year in which the examination is to be taken. The ECVPT Treasurer should be notified by email of this payment

6. An original signed letter from the Resident's supervisor (if the Resident has not completed his/her Residency Programme), or any ECVPT Diplomate who knows him/her (if the Resident has completed their Residency Programme), attesting to the following:
a. the Resident's readiness to sit the examination;

b. the commitment of the Resident to the constitutional objectives of the ECVPT;

c. the moral and ethical standing of the Resident within the veterinary profession.

The integrity of the Diplomate status examination will be maintained by the European College of Veterinary Pharmacology and Toxicology to ensure the validity of scores awarded to the candidates.

Reapplication fees

The examination fee has to be paid in full by the specified deadline for the year in which the examination is to be retaken. The fee is around fifty percent (50%) of the fees for the examination. The fees may be changed at the discretion of the Executive Committee

Postponing examinations

Candidates accepted by the Credentials Committee to take the Examination must take this examination within three (3) years of first acceptance. The candidate must pass all parts of the examination within eight (8) years of the first examination. In the event that the candidate does not take the Examination within three (3) years of first acceptance of his/her credentials, he/she will have to resubmit a full application (including the fees) to the Credentials Committee in order to take the examination.

Chapter 5 - ECVPT examinations

The examination process of the ECVPT is intended to identify and certify excellent veterinary pharmacologists and toxicologists. To this end, multiple choice questions are used to define the breadth of knowledge, written answers are used to define the depth of knowledge, and problem management questions are used to define the problem-solving skills of candidates. All veterinary pharmacologists and toxicologists need a sound working knowledge of general veterinary pharmacology and veterinary toxicology to function effectively as specialists. The examination is intended to assure that specialists have the required level of general knowledge in their chosen field.

While it is not intended that English language skills should provide an unfair advantage, successful candidates are likely to be sufficiently proficient in English to be able to read, write, and understand veterinary publications and examination questions written in that language.

Examination

The Examination Committee prepares the examination.

Veterinary pharmacology and toxicology general examination

The examination will test the working knowledge of all aspects of veterinary pharmacology and toxicology. It is composed of a maximum of one hundred (100) multiple-choice questions with one (1) best answer to each question. The time allocated is 3 hours. The pass point will be calculated using the Diplomate rating process (the Angoff method) or, when there are sufficient candidates, by psychometric analysis.

Veterinary pharmacology and toxicology certifying examination

This portion of the examination is designed to test problem solving capabilities and skills. The questions will be problem-oriented. Candidates should be prepared to interpret a number pharmacological and toxicological problems (such as therapeutic drug monitoring, drug interactions, adverse drug reactions, animal poisoning or intoxication, regulatory issues,

mechanisms) and to answer questions covering all areas of veterinary pharmacology and toxicology.

It is composed of three (3) parts:

1. A multiple choice (MCQ) and extended matching questions (EMQ) paper that is composed of a maximum of one hundred (100) problem-orientated questions covering both pharmacology and toxicology. There is one (1) best answer to each question. The exact number of MCQ and EMQ as well as the total number of questions is at the discretion of the examination committee. The time allocated is 3 hours. The pass point will be calculated using the Diplomate rating process (the Angoff method) or, when there are sufficient candidates, by psychometric analysis.

2. An essay paper consisting of 2-5 major topics. Each topic may include several questions. Sample questions will be provided to the Resident after his/her credentials have been approved. The time allocated is 3 hours. Candidates are provided with a computer and should type their answers using the word processor programme provided. The essays are marked by two Examination Committee members, including the person who set the question. Marking keys and/or model answers are presented to the Examination Committee for approval by the individual examiners who devised each essay. The pass point for the essay paper will be fixed at 60%. A minimal pass point of 40 % has to be reached for each topic. In order to pass the essay paper of the certifying examination, the overall mark for the essay paper should minimally be 60% (the average of the marks for each question; fixed at 60% as stated).

3. An objective problem-based oral examination consisting of two case management examinations. The candidate will be given thirty (30) minutes of preparation time per problem (or case) (sixty (60) minutes in total), when they can review material relating to the problems (or cases) that they are about to discuss. This period will be followed immediately by two forty-five (45)-minute examinations, during which a series of predetermined objective problem-based questions are asked, with each having a predetermined score. Each candidate will be examined by at least two (2) members of the Examination Committee (a Questioner

and an Observer / Scorer). The total time allocated for the oral examination is one hundred and fifty (150) minutes. The pass point will be set between 60% and 70%. When there are sufficient candidates this will be determined by examination of scatter plots of the results (cluster method). The pass point has to be reached for each question in order for a pass mark to be achieved for the certifying objective case management examination. The pass point cannot be reached by using a high score in one question, or more, to compensate for a score below the pass mark in other questions.
Information on the examination and sample questions may be found on the website www.ecvpt.org

All parts of the examination must be completed successfully. This means that each multiple choice paper and each question in the essay and objective case management examinations must be above the pass mark to become certified as a European Veterinary Specialist™ in Pharmacology and Toxicology and Diplomate of the European College of Veterinary Pharmacology and Toxicology.

Examination results

Credentials of candidates who pass the examination will be forwarded to the President by the Chairperson of the Examination Committee. The President will communicate the results to the candidates.

Appendix A Guidelines for written reports

As part of the requirements to qualify to take the ECVPT certifying examinations candidates are asked to prepare and submit five (5) short written reports. These reports are designed to demonstrate the candidate's ability to handle and report on veterinary pharmacology and toxicology problems at a specialist level using a problem oriented approach. The objective of these short written reports is to demonstrate how a candidate thinks about a problem.

Candidates are encouraged to consult their Resident Advisor on the selection of suitable subjects for the written reports. Reading examples of written reports provided on the ECVPT website is also beneficial. It is appropriate for an Advisor to comment on a separate practice case report that is not submitted, however candidates should not obtain any direct assistance or comments from anyone on the veterinary pharmacology and toxicology content of the text of the short written reports for submission. Limited assistance with language is acceptable.

The application should be sent (in PDF format) by email to the Credentials Committee chairman to arrive no later than three (3) months before the date of the examinations. Candidates are advised to keep one copy of the text and of the illustrations. Please note that the college will not return applications. The hard copies of the written reports will be destroyed.

Plagiarism

The College takes any evidence or allegation of plagiarism very seriously. Copying other case reports or excerpts from textbooks or articles is cheating. Confirmed incidences of plagiarism will have serious repercussions (including permanent exclusion from College examinations or suspension from the College).

Presentation

The short written reports should be typewritten, double-spaced on A4 paper, and should be illustrated using, for example, tables, figures and schematic diagrams. The reports must be written in English following the structure given below. The short written reports should be presented in a secure binder (e.g. ring binder or spirally bound). Loose sheets are not

acceptable. A list of abbreviations used throughout the five written reports should be presented on a separate page at the start of the written reports. Each written report should be given a number. Each page and all illustrations must be clearly numbered and included within the bound document.

While it is not intended that English language skills should provide an unfair advantage, successful candidates are likely to be sufficiently proficient in English to be able to write in that language. Software for checking spelling and grammar should be used to avoid frequent errors. The reports should be written in full prose, rather than in telegram or bullet point style.

Subject matter selection

Subject matter for the written reports should be selected to include as wide a variety of material as possible, with a view to providing the examiners with an impression of the experience of the candidate. The subject matter does not have to be rare or unusual. At least one out of the five written reports should relate to veterinary pharmacology if your main experience is with veterinary toxicology, and vice versa. As far as possible the working up of the subject shall be the responsibility of the candidate, and where assistance has been given this should be noted in a statement made on a separate page at the end of the case.

The following cases usually represent poor subject matter for written reports:

- Subjects that are not followed up adequately, either because of administrative, financial or technical constraints;
- Subjects that are too easy (too little to assess, monitor or discuss) or too complex (remember the word count!);
- Subjects where the candidate was not the main contact.

Format of Written Report

Written reports should be set out under the following headings (where relevant):

a) Word count

All candidates are required to work within the word count. Each case report should be no greater than around 1500 words (±15%), excluding tables of results, figure legends and references, with the word count written at the beginning of each written report. In total the five (5) case summaries should not exceed 7500 words. Candidates run the risk of losing marks or having their case summaries returned if this is not complied with.

b) Title of the written report

c) Identification of subject matter

The presenting complaint and pertinent history is essential. What is considered to be pertinent will depend on the subject matter. If certain information was not available to the candidate then this should be stated.

d) Problem list

The problem list must summarise all the veterinary pharmacology and toxicology issues identified. Problems that the candidate considers to be insignificant should be clearly identified as such. Problem lists may be updated when it is relevant to do so.

e) Investigations

Any investigations should be related to the problem list. The candidate would be expected to fully justify undertaking any test that does not help to reduce this list. Potentially important items on the problem list should not be ignored in the report. The results of all tests carried out should be provided. Any non-standard should be fully justified and backed up with references where appropriate. If a test was omitted due to financial or logistical constraints then this must be stated. However if important tests are omitted such that the candidate's ability to work up the problem has been seriously limited, then this does not represent good subject matter selection.

f) Discussion

This should be pertinent and relevant to the particular problem, rather than an extensive review of the literature). Any specific features of the problem that are of particular note should be discussed with reference to current literature. Do not provide a literature review – but rather comment when the problem differs from what is reported elsewhere.

g) Conclusion

This should take the form of a concise conclusion on the outcome of the problem and any advice given.

h) References

High quality references from peer-reviewed journals should be cited in the text and at the end when these have been used in the management of the case. The style of the Journal of Veterinary Pharmacology and Therapeutics should be used. It is rarely necessary to reference standard textbooks. A maximum of ten (10) references is suggested.

i) Illustrations

Ensure that illustrations are included and bound within the A4 format of the written reports. Ensure that all tables and figures are labelled correctly and appropriate legends included. Where the results of tests are included in the written reports, ensure that appropriate reference points (such as limit of quantification, limit of detection) are included for each parameter.

Further information

Marking of written reports

Three reviewers assess each written report independently. Written reports will not be reviewed by a reviewer from the candidate's own institution. Two (2) out of the three (3) reviewers must give a pass mark for it to be accepted. Four (4) out of the five (5) written reports must be accepted for the candidate's application to sit the certifying examination to be approved. Case summaries that are rejected should be replaced with new cases the following year taking care to amend the format where necessary.

Examples of written reports

Examples of good written reports are provided on the ECVPT website (www.ecvpt.org).