

# Postgraduate Diploma

## Veterinary Pharmacology and Natural Therapies



## Postgraduate Diploma Veterinary Pharmacology and Natural Therapies

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-veterinary-pharmacology-natural-therapies](http://www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-veterinary-pharmacology-natural-therapies)

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# 01

# Introduction

This high-level program addresses the concept and evolution of pharmacology, the objectives of Veterinary Pharmacology, to give way to the concepts of Pharmacokinetics and Pharmacodynamics. Pharmacokinetics will cover topics of drug transport across membranes, as well as the concepts of drug release, absorption, distribution, metabolism and excretion, addressing the variability of response in different species. Likewise, the professional will study in depth Naturopathic Medicine as a complementary strategy to conventional medicine. A unique specialization that stands out for the quality of its contents and its excellent teaching staff, composed of professionals with years of experience in the sector.





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*A comprehensive program on the use of veterinary drugs for the prevention and treatment of diseases affecting animal health”*

This Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies offers the professional specialized knowledge on Veterinary Pharmacology of each system of animal species, also addressing the legal framework applicable to veterinary drugs and, as an area of total actuality, addresses the basic criteria of Naturopathic Medicine as a strategy that not only does not displace, but complements Conventional Medicine.

Throughout these months, the student will study applied pharmacokinetics in depth: pharmacokinetic models, obtaining and evaluating pharmacokinetic parameters by means of practical applied problems and dosing to determine the calculation of prescribed dosage guidelines for each animal patient. On the other hand, in Pharmacodynamics the student will become familiar with the mechanisms of action and the molecular aspects of the different pathways, as well as with the quantitative aspects in terms of dose-response curves, which will allow him/her to calculate the therapeutic index and the toxic index of the drugs.

The professional will also develop the aspects related to the prescription, dispensing and supply of medicines for veterinary use. It presents the veterinary prescription and its different variants with emphasis on the different types of prescription, roles and responsibilities of the different agents involved in the dispensing and supply of veterinary medicines.

The Postgraduate Diploma is based on the *One Health* approach to Veterinary Pharmacovigilance, since its role in the identification, quantification, evaluation, prevention and minimization of risks derived from the use of veterinary drugs is fundamental in Animal Health and Welfare as well as in Public Health.

It will also study the different aspects covered by the safe use of veterinary drugs in animals, the safety of food of animal origin, the safety of people in contact with veterinary drugs and safety in the environment.

This Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies is a great tool available to the professional pharmacist that allows him/her to specialize in the area of pharmacology in the veterinary clinic, since there are more and more pets and exotic animals that require specific medication for certain pathologies. A high-quality program, offering the most advanced resources in online specialization, to guarantee the student an effective, real and practical learning that will boost their competencies to the highest level in this area of work.

This **Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies** contains the most complete and up-to-date educational program on the market. The most important features include:

- ♦ Innovative and up-to-date diagnostic techniques in infectious diseases and their application in daily clinical practice, including the use of cytology as a diagnostic tool in these diseases
- ♦ The most frequent and not so frequent pathologies of infectious origin in dogs from a practical and completely up-to-date point of view
- ♦ Infectious Pathologies oriented to the Feline Species, dealing extensively with all those of this species
- ♦ Vision "One Health", in which Zoonoses and their implications for public health will be reviewed
- ♦ Most frequent Infectious Pathologies of Dogs and Cats in the Tropics, with focus on Latin America. At present, there are no more exotic diseases, and they should be included by the clinician in the differential diagnosis when the epidemiology allows to suspect them
- ♦ Prevention and management of all infectious diseases, including clinical, home and community settings



*Improving your skills in a sector with a high demand for professionals will boost both your professional and personal career"*

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*Acquire the knowledge of the scientific, ethical and social foundations of veterinary pharmacology and the skills and attitudes for its practical application in a training created for excellence”*

The program’s teaching staff includes professionals from sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Expert curriculum and quality content are the key to your learning success.*

*It includes a complete review of the use of natural pharmacology in the treatment of animal diseases.*



# 02 Objectives

The design of the program of this Postgraduate Diploma will allow students to acquire the necessary skills to update their knowledge in the profession after studying in depth the key aspects of Veterinary Pharmacology. Its objective is to provide the student with the required competencies in relation to preclinical or clinical research of drugs used in veterinary medicine, and their application in the therapeutic use of drugs so that he/she can better incorporate into the professional field. The knowledge poured in the development of the points of the study plan will drive the professional from a global perspective, with full training for the achievement of the proposed objectives.







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*Learn in an efficient way, with a real qualification objective, with this unique program for its quality and price, in the online teaching market"*



## General Objectives

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- Examine the general concepts of pharmacology at the veterinary level
- Determine the mechanisms of action of drugs
- Analyze Pharmacokinetics and Pharmacodynamics
- Review the current legislation on veterinary pharmaceutical products.
- Analyze aspects related to the prescription, dispensing and administration of veterinary pharmaceutical products
- Determine the importance of the responsible and rational use of medicines for global health
- Train professionals in simple and natural treatments, and their integration in the curative activities within Conventional Veterinary Medicine
- Examine the theoretical bases of Natural Medicines; especially homeopathy, phytotherapy and the use of nutraceuticals
- Briefly frame the evolution of the disciplines within a historical context



*Take the opportunity and take the step to get up to date on the latest developments in Veterinary Pharmacology and Natural Therapies"*





## Specific Objectives

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- ♦ Develop all those processes that affect a drug molecule when administered to an animal species
- ♦ Establish the different biological barriers and their significance in therapeutic effectiveness
- ♦ Examine the factors that will influence drug absorption, distribution and elimination processes.
- ♦ Analyze how to manipulate the renal excretion process and its importance in the treatment of intoxications
- ♦ Establish, based on the pharmacodynamics and pharmacokinetics of a drug, its possible drug-drug interactions
- ♦ Identify and characterize at the molecular level the different types of pharmacological receptors
- ♦ Determine which second messengers and biochemical pathways are coupled to each of the pharmacological receptor types
- ♦ Present the relationship between the molecular phenomenon and the pharmacological effect
- ♦ Analyze all the phenomena involved in drug-receptor interaction
- ♦ Examine the different types of pharmacological agonism and antagonism
- ♦ Correctly establish the differences between the different species that are important for the administration of drugs or their therapeutic efficacy
- ♦ Develop the concepts of side, adverse and toxic effects
- ♦ Consult and apply current regulations in a practical way in veterinary medicine
- ♦ Quickly find the resources available on the AEMPS website and, in particular, the information available on the online Veterinary Medicines Information Center (CIMA Vet)
- ♦ Determine everything related to the veterinary prescription being able to make the appropriate prescription in each specific case
- ♦ Understand the roles and responsibilities of the various actors involved in the dispensing and supply of veterinary medicinal products
- ♦ Be able to make decisions regarding pharmacological treatments with an adequate benefit-risk ratio, or discontinue their use when this is not possible
- ♦ Determine our obligations in relation to the Spanish System of Pharmacovigilance of Veterinary Medicines (SEFV-VET) and the information it can provide us with
- ♦ Examine the Guidelines for responsible use in different animal species and how to apply them appropriately in veterinary practice
- ♦ Examine the responsibility we have in the exercise of our professional work, in the use of medicine, in relation to animal health, human health and the environment
- ♦ Assume the importance of our decisions in the use of antimicrobials, in the prevention and control of antimicrobial resistance and know and follow the PRAN guidelines
- ♦ Analyze objective clinical signs or manifestations and subjective symptoms or perceptions in homeopathy
- ♦ Approach the anamnesis from these objective and subjective manifestations
- ♦ Present the Homeopathic Materia Medica and its therapeutic indications
- ♦ Determine the rationale behind the development of drugs
- ♦ Approaching the approach to pathologies from homeopathic repertorization
- ♦ Establish the active principles most commonly used in phytotherapy and their application
- ♦ Examine the different nutraceutical products and their application

03

# Course Management

The teaching staff of this Postgraduate Diploma is made up of professionals specialized in the study of Pharmacology, both human and veterinary, with clinical experience in small and large animals. They have extensive and recognized teaching and research experience, with officially recognized six-year research periods, participation in numerous research projects and dissemination of their research both nationally and internationally in high impact journals, books and conferences.



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*An intensive program that will specialize you in the areas of general veterinary pharmacology, the legal framework in which it is developed and the area of natural pharmacology"*

## Management



### Dr. Santander Ballestín, Sonia

- ◆ Associate Professor of the Department of Pharmacology and Physiology. University of Zaragoza
- ◆ Degree in Biology and Biochemistry, specializing in the area of Pharmacology
- ◆ Teaching Coordinator, Department of Pharmacology, University of Zaragoza, Spain
- ◆ PhD with the European Degree from the University of Zaragoza
- ◆ Master's Degree in Environment and Water Management. Andalusia Business School
- ◆ Lecturer in the Postgraduate Certificate "Introduction to Pharmacology: Principles for the Rational Use of Drugs" Basic Program of the University of Experience of Zaragoza
- ◆ Lecturer in the Postgraduate Certificate "Introduction to Pharmacology: Principles for the Rational Use of Drugs" Basic Program of the University of Experience of Zaragoza
- ◆ Lecturer in the Postgraduate Certificate "Introduction to Pharmacology: Principles for the Rational Use of Drugs" Basic Program of the University of Experience of Zaragoza
- ◆ Evaluation professor in objective structured clinical evaluation of the medical degree
- ◆ Lecturer in the Postgraduate Certificate "Introduction to Pharmacology: Principles for the Rational Use of Drugs" Basic Program of the University of Experience of Zaragoza

## Management

### Ms. Abanto Peiró, María Dolores

- ♦ Health administration Pharmacist. Alcañiz
- ♦ Degree in Pharmacy
- ♦ Technical Agricultural Engineering. Literacy University of Valencia
- ♦ Agricultural Research Projects at the Valencian Institute of Agrarian Research
- ♦ Assistant Pharmacist in Pharmacy Office
- ♦ Medical Visitor
- ♦ State Pharmacist in the Government Delegation of Aragon
- ♦ Inspection and control of drugs in public and judicial security
- ♦ Foreign Health Inspection

### Ms. González Sancho, Lourdes

- ♦ Health administration Pharmacist. Health Department
- ♦ Degree in Pharmacy from the University of Valencia
- ♦ Health administration Pharmacist. Department of Health and Consumer Affairs
- ♦ Pharmaceutical care in the pharmacy office
- ♦ Food E-Commerce. General Directorate of Public Health
- ♦ Labeling and Claims on Food Composition. General Directorate of Public Health
- ♦ Resistance to Antibiotics. General Directorate of Public Health
- ♦ Biocides Regulatory. Health Surveillance (HPAI)
- ♦ Recycling of plastics and contaminants in food and feed. General Directorate of Public Health
- ♦ Audit systems and internal audit. General Directorate of Public Health

### Dr. Luesma Bartolomé, María José

- ♦ Study group on prion diseases, vector-borne diseases and emerging zoonoses. University of Zaragoza
- ♦ Degree in Veterinary Medicine. University of Zaragoza
- ♦ Doctor of Veterinary Medicine. University of Zaragoza
- ♦ Study group of the University Research Institute. Research Institute
- ♦ Film and anatomy teacher. University degree: Complementary Academic Activities University of Zaragoza
- ♦ Master's Degree in Quality Systems Audits (Project: "Implementation of a quality system in a testing laboratory"). Diputación General de Aragón
- ♦ Professor of Anatomy and Histology. University degree: Graduate in Optics and Optometry. University of Zaragoza
- ♦ Professor of the Final Degree Project for University Degrees: Degree in Medicine. University of Zaragoza
- ♦ Professor of Morphology, Development and Biology. University degree: Professional Master's Degree in Initiation to Research in Medicine. University of Zaragoza
- ♦ Certificate B for the use of animals for experimental purposes
- ♦ Recognition of a six-year research period by the University Quality and Prospective Agency of Aragon (Government of Aragon)

# 04

## Structure and Content

The structure of this program has been designed in such a way that the professional to whom it is addressed will be able to identify and solve problems related to veterinary pharmacology, thanks to a unique methodology and the support of the experts who have developed it. This Postgraduate Diploma offers the student a realistic learning in the context of Veterinary Pharmacology, which makes it an extremely useful tool for the pharmaceutical professional. Through clinical simulations at a practical level, you will be able to face real situations and provide a broader and more effective response to them.





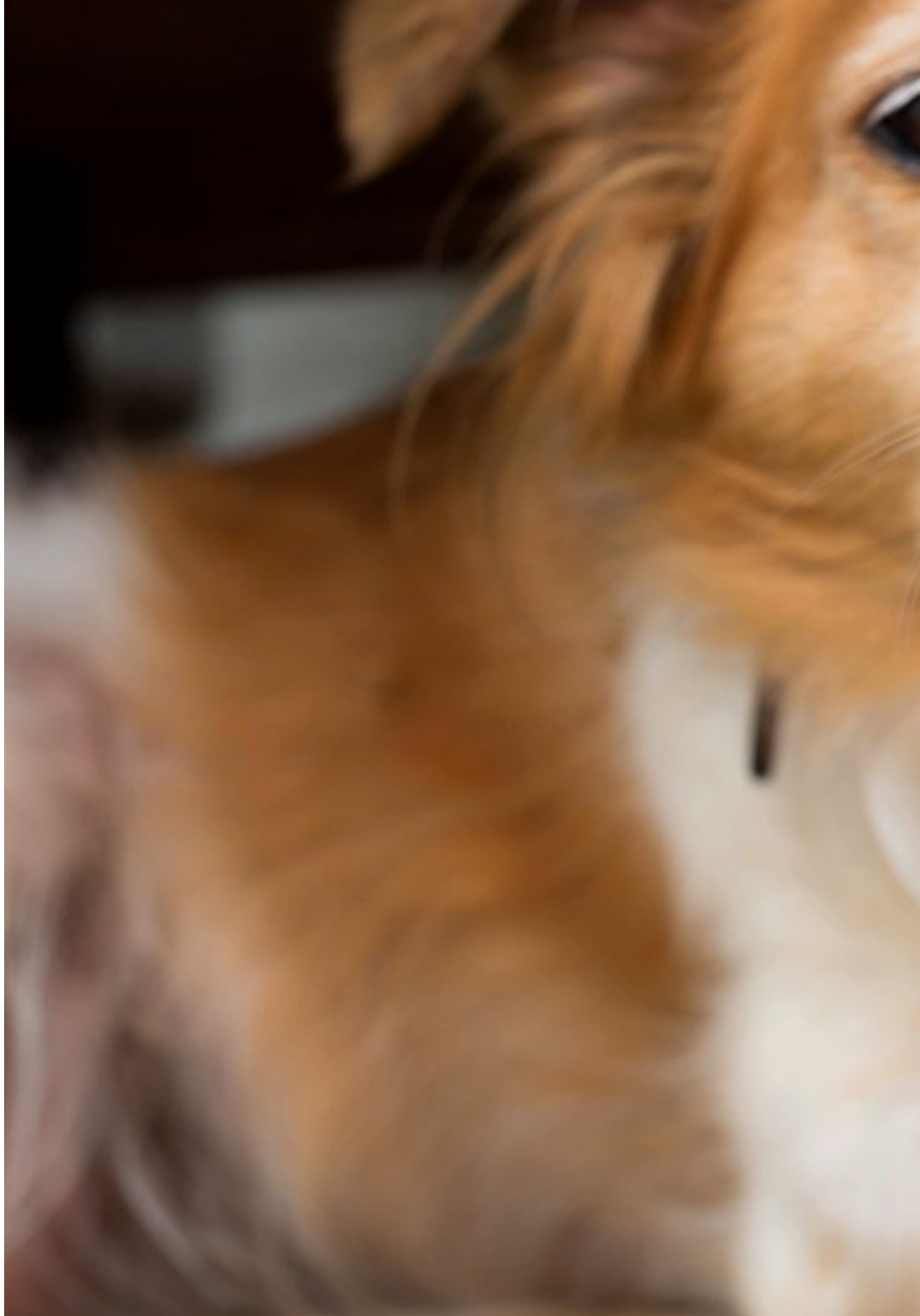


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*A unique opportunity to learn from internationally renowned professors, with teaching, clinical and research experience”*

## Module 1. General Pharmacology

- 1.1. Concept and Evolution of Pharmacology. Objectives of Veterinary Pharmacology
  - 1.1.1. Origin
  - 1.1.2. Evolution of Pharmacology as a Science
  - 1.1.3. Veterinary Pharmacology: Objectives
  - 1.1.4. General concepts
    - 1.1.4.1. Pharmaceuticals
    - 1.1.4.2. Medication
    - 1.1.4.3. Pharmaceutical Forms
    - 1.1.4.4. Others
- 1.2. Pharmacokinetics I: Drug Transport Systems across Biological Membranes.
  - 1.2.1. General Principles
  - 1.2.2. General Transportation Mechanisms
    - 1.2.2.1. Transport Across Cell Membranes
    - 1.2.2.2. Transport Through Intercellular Clefts
- 1.3. Pharmacokinetics II: Routes of Drug Administration. Concept of Absorption
  - 1.3.1. General Principles
  - 1.3.2. Routes of Adminstrating Medication
    - 1.3.2.1. Enteral Routes
      - 1.3.2.1.1. Oral
      - 1.3.2.1.2. Rectal
      - 1.3.2.1.3. Sublingual
      - 1.3.2.1.4. Others: Inhalation, Otic, Conjunctival, Dermal or Topical
    - 1.3.2.2. Parenteral Routes
      - 1.3.2.2.1. Intravenous
      - 1.3.2.2.2. Intramuscular
      - 1.3.2.2.3. Subcutaneous
      - 1.3.2.2.4. Intrathecal
      - 1.3.2.2.5. Epidural
  - 1.3.3. Absorption Mechanisms
  - 1.3.4. Concept of Bioavailability
  - 1.3.5. Factors that Modify Absorption
- 1.4. Pharmacokinetics III Drug Distribution I





- 1.4.1. Distribution Mechanisms
  - 1.4.1.1. Binding to Plasma Proteins
  - 1.4.1.2. Hematoencephalic Barrier
  - 1.4.1.3. Placental Barrier
- 1.4.2. Factors that Modify the Distribution
- 1.4.3. Distribution Volume
- 1.5. Pharmacokinetics IV: Drug Distribution ii. Pharmacokinetic Compartments.
  - 1.5.1. Pharmacokinetic Models
  - 1.5.2. Concepts of the Most Characteristic Parameters
    - 1.5.2.1. Apparent Volume of Distribution
    - 1.5.2.2. Aqueous Compartments
  - 1.5.3. Variability of the Response
- 1.6. Pharmacokinetics V: Drug Elimination: Metabolism
  - 1.6.1. Concept of Metabolism
  - 1.6.2. Phase I and II Metabolic Reactions
  - 1.6.3. Hepatic Microsomal System: Cytochromes. Polymorphisms.
  - 1.6.4. Factors Influencing Biotransformation Processes
    - 1.6.4.1. Physiological Factors
    - 1.6.4.2. Pathological Factors
    - 1.6.4.3. Pharmacological Factors (Induction/Inhibition)
- 1.7. Pharmacokinetics VI: Drug Elimination: Excretion
  - 1.7.1. General Mechanisms
  - 1.7.2. Renal Excretion
  - 1.7.3. Biliary Excretion
  - 1.7.4. Other Excretion Routes
    - 1.7.4.1. Saliva
    - 1.7.4.2. Milk
    - 1.7.4.3. Sweat
  - 1.7.5. Elimination Kinetics
    - 1.7.5.1. Elimination Constant and Half-Life
    - 1.7.5.2. Metabolic and Excretion Clearance
  - 1.7.6. Factors that Modify the Excretion

- 1.8. Pharmacodynamics: Drug Action Mechanisms Molecular Aspects
    - 1.8.1. General Concepts Receptor
    - 1.8.2. Types of Receptors
      - 1.8.2.1. Ion Channel Associated Receptors
      - 1.8.2.2. Enzyme Receptors
      - 1.8.2.3. Receptors Associated with Protein G
      - 1.8.2.4. Intracellular Receptors
    - 1.8.3. Drug- Receptor Interactions
  - 1.9. Adverse Reactions to Medications. Toxicity
    - 1.9.1. Classification of Adverse Reactions According to their Origin
    - 1.9.2. Mechanisms of Production of Adverse Reactions
    - 1.9.3. General Aspects of Drug Toxicity
  - 1.10. Pharmacological Intervention
    - 1.10.1. Concept of Pharmacological Interaction
    - 1.10.2. Modifications Induced by Pharmacological Interactions
      - 1.10.2.1. Synergy
      - 1.10.2.2. Agony
      - 1.10.2.3. Antagonism
    - 1.10.3. Pharmacokinetic and Pharmacodynamic Interactions
      - 1.10.3.1. Variability in Response Due to Pharmacokinetic Causes
      - 1.10.3.2. Variability in Response due to Pharmacodynamic Causes
- Module 2. Legal Framework of Medicine for Veterinary Use. Veterinary Pharmacovigilance**
- 2.1. Basic Applicable Regulations. Spanish Agency for Medicines and Medical Devices
    - 2.1.1. European Regulations
    - 2.1.2. National Regulations
    - 2.1.3. Aemps
    - 2.1.4. Sanitary Requirements for Veterinary Medicinal Products
  - 2.2. Prescription of Medicines for Animal Use
    - 2.2.1. Veterinary Prescription
    - 2.2.2. Ordinary Statute of Limitations
    - 2.2.3. Exceptional Requirements
    - 2.2.4. Prescription of Narcotic Drugs
    - 2.2.5. Prescription of Medicated Feed
  - 2.3. Dispensing of Medicines for Animal Use
    - 2.3.1. Pharmacy Offices
    - 2.3.2. Livestock Entities or Groups
    - 2.3.3. Retail Commercial Establishments
    - 2.3.4. Emergency First Aid Kits
  - 2.4. Supply of Medicinal Products for Animal Use to Veterinarians
    - 2.4.1. Professional Practice of Veterinary Medicine
    - 2.4.2. Availability of Veterinary Medicines
    - 2.4.3. Possession and Use of Medicinal Gases
  - 2.5. Commercial Presentation and Information on Veterinary Medicinal Products
    - 2.5.1. Packaging and Labeling
    - 2.5.2. Prospectus
    - 2.5.3. Information and Advertising
  - 2.6. Veterinary Pharmacovigilance I
    - 2.6.1. Introduction to Veterinary Pharmacovigilance. Glossary of Terms
    - 2.6.2. Risks Derived from Marketed Medicines
    - 2.6.3. Spanish Pharmacovigilance System for Veterinary Medicinal Products (SEFV-VET) (SEFV-VET)
  - 2.7. Veterinary Pharmacovigilance II Animal Safety
    - 2.7.1. Safe Use of Veterinary Drugs in Animals
    - 2.7.2. Animal Welfare and Disease Prevention in Animals
    - 2.7.3. Guidelines for the Responsible Use of Large Animal Species: Animals for Slaughter
    - 2.7.4. Guidelines for Responsible Use of Companion Animal Species
  - 2.8. Veterinary Pharmacovigilance III Safety of Persons
    - 2.8.1. Adverse Effects of Veterinary Drugs on Humans
    - 2.8.2. Good Practices in the Use and Administration of Veterinary Medicine
    - 2.8.3. Protective Equipment for the Administration of Veterinary Pharmaceuticals
  - 2.9. Veterinary Pharmacovigilance IV Safety of Foods of Animal Origin
    - 2.9.1. Residues of Veterinary Medicine in Products of Animal Origin
    - 2.9.2. Importance of the Routes of Administration in Waiting Times
    - 2.9.3. Maximum Residue Limits (MRL)
    - 2.9.4. National Waste Research Plan (NWRP)

- 2.10. Veterinary Pharmacovigilance V. Antibiotic Resistance and Safety for the Environment.
  - 2.10.1. Importance of Responsible Use of Veterinary Antimicrobials to Prevent Antibiotic Resistance
  - 2.10.2. National Plan Against Antibiotic Resistance (NAPAR) 2019-2021
  - 2.10.3. Categorization of Antibiotics for Veterinary Use
  - 2.10.4. Importance of the Responsible Use of Medicines for the Environment

### Module 3. Natural Therapies: Homeopathy, Phytotherapy and Nutraceuticals

- 3.1. Introduction
  - 3.1.1. Definition of Natural Therapies
  - 3.1.2. Classification
  - 3.1.3. Differences with Conventional Medicine
  - 3.1.4. Regulation
  - 3.1.5. Scientific Evidence
  - 3.1.6. Risk
- 3.2. Homeopathy I
  - 3.2.1. Brief Historical Review. The Hahnemann Concept
  - 3.2.2. Concept of Homeopathy: Key Ideas
  - 3.2.3. Basic Principles
- 3.3. Homeopathy II The Field of Homeopathy
  - 3.3.1. Constitutions
  - 3.3.2. Symptom Modalities
  - 3.3.3. Medical History
  - 3.3.4. Hering Blade
- 3.4. Homeopathy III Properties
  - 3.4.1. Preparation.
    - 3.4.1.1. Substances Used in Their Manufacture
    - 3.4.1.2. Excipients
  - 3.4.2. Preparation of Mother Tincture
  - 3.4.3. Dilutions
    - 3.4.3.1. Dilution Methods and Dilutions
    - 3.4.3.2. Dynamization or Succussion
    - 3.4.3.3. Classification of Dilutions
  - 3.4.4. Pharmaceutical Forms
  - 3.4.5. Routes of Administration
- 3.5. Homeopathy IV Related Symptoms
  - 3.5.1. General aspects
  - 3.5.2. Medical Subject Matter. Hahnemann's Treatment
  - 3.5.3. Introduction to the Repertoire
- 3.6. Approach to Pathologies from the Homeopathic Repertorization (I)
  - 3.6.1. Digestive system
  - 3.6.2. Respiratory System.
  - 3.6.3. Urinary System.
  - 3.6.4. Male and Female Genital Apparatus
- 3.7. Approach to Pathologies from the Homeopathic Repertorization (II)
  - 3.7.1. Mammitis
  - 3.7.2. Tegumentary System
  - 3.7.3. Locomotor System.
  - 3.7.4. Sensory Organs
- 3.8. Phytotherapy.
  - 3.8.1. Brief Historical Review
  - 3.8.2. Veterinary Phytotherapy
  - 3.8.3. Active Ingredients of Medicinal Plants
  - 3.8.4. Preparations and Forms of Administration
  - 3.8.5. Prescribing and Dispensing Guide
- 3.9. Phytotherapy. Addressing Pathologies
  - 3.9.1. Digestive System
  - 3.9.2. Respiratory System.
  - 3.9.3. Urinary System.
  - 3.9.4. Male and Female Genital Apparatus
  - 3.9.5. Locomotor System.
- 3.10. Nutraceuticals and Functional Foods
  - 3.10.1. Brief Historical Review
  - 3.10.2. Definition
  - 3.10.3. Classification and Application

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.



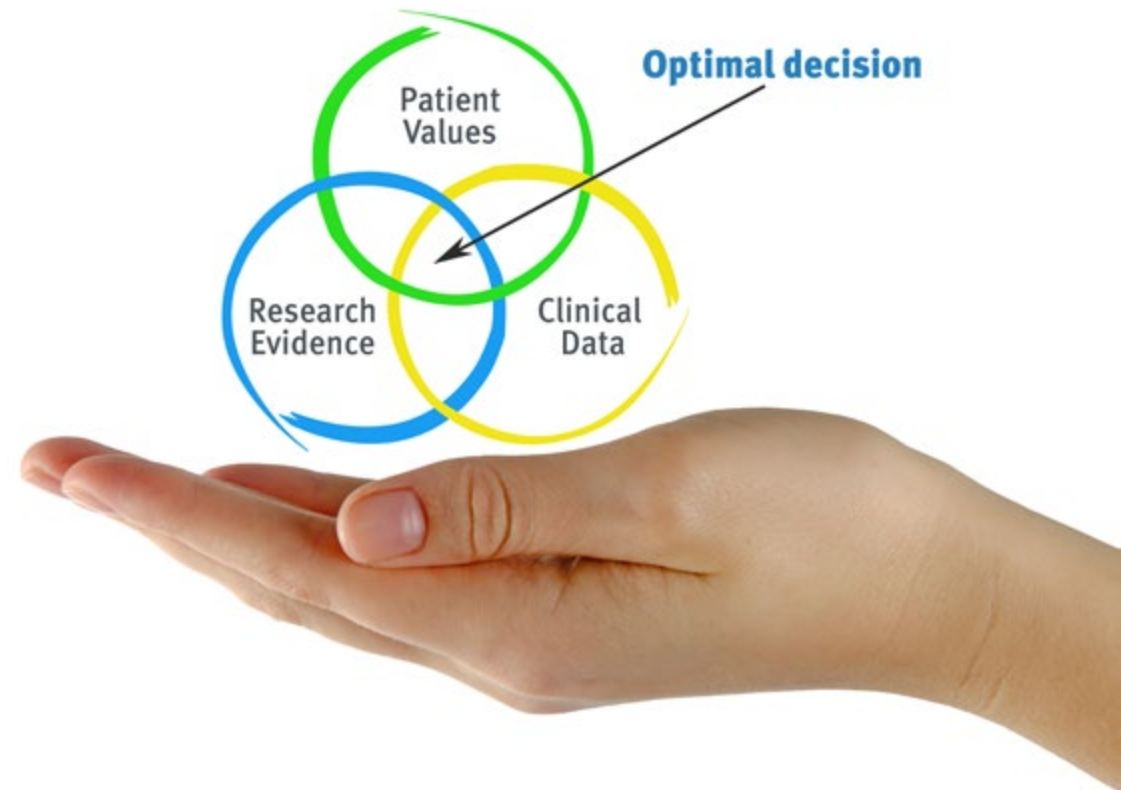


*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will be confronted with multiple simulated clinical cases based on real patients, in which they will have to investigate, establish hypotheses and ultimately, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, attempting to recreate the actual conditions in a pharmacist's professional practice.



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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

1. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.



*Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Video Techniques and Procedures

TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



### Interactive Summaries

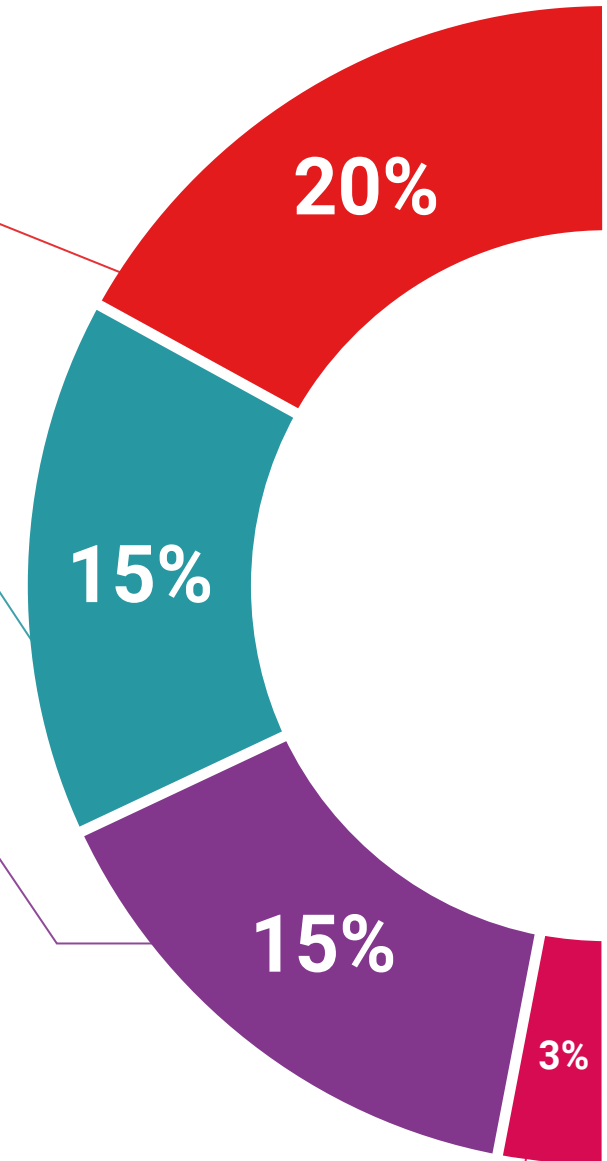
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

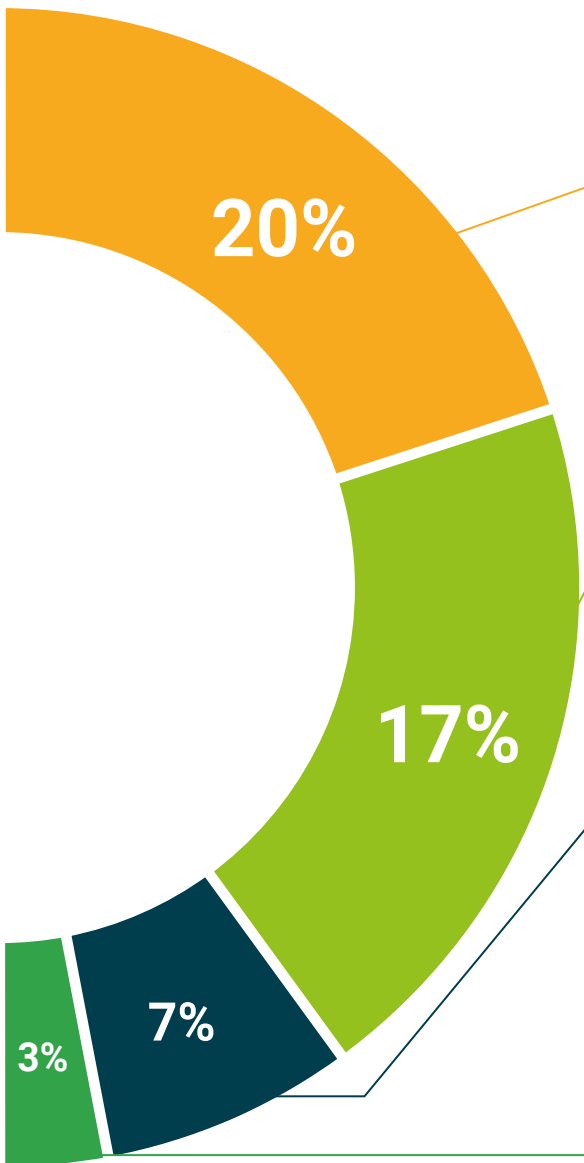
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



**Classes**

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

# Certificate

The Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

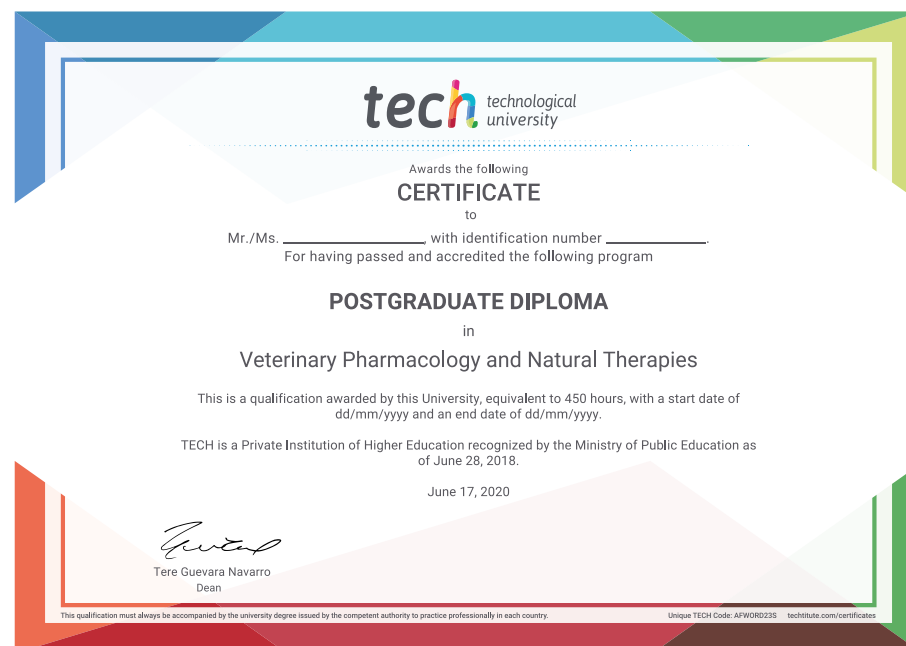
This **Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies** contains the most complete and up-to-date educational program on the market.

After the student has passed the evaluations, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the **Postgraduate Diploma**, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional from career evaluation committees.

Title: **Postgraduate Diploma in Veterinary Pharmacology and Natural Therapies**

Official N° of Hours: **450 h.**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.



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education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present  
development language  
virtual classroom



## Postgraduate Diploma Veterinary Pharmacology and Natural Therapies

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

# Postgraduate Diploma

## Veterinary Pharmacology and Natural Therapies

