

# Postgraduate Diploma

Clinical and Molecular Management  
of Infections Caused by Multidrug-  
Resistant Bacteria



## Postgraduate Diploma Clinical and Molecular Management of Infections Caused by Multidrug- Resistant Bacteria

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-clinical-molecular-management-infections-caused-multidrug-resistant-bacteria](http://www.techtute.com/us/pharmacy/postgraduate-diploma/postgraduate-diploma-clinical-molecular-management-infections-caused-multidrug-resistant-bacteria)

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# 01

# Introduction

With the alarming increase in bacterial strains resistant to multiple antibiotics, it is imperative to adopt innovative therapeutic approaches, including advanced molecular diagnostic techniques and optimization of antimicrobial treatments. Accurate identification of resistance genes and selection of targeted therapies based on genetic profiling are critical to improve clinical outcomes and reduce the spread of resistance. Therefore, interdisciplinary collaboration between pharmacists, microbiologists and clinicians is essential. In this context, TECH has created a comprehensive online program, which offers total flexibility and adapts to the individual needs of the student, eliminating the need for physical presence or to adhere to fixed schedules. In addition, it is based on the innovative Relearning methodology.





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*This 100% online Postgraduate Diploma will provide you with the skills and knowledge necessary to face the challenges in the Clinical and Molecular Management of Infections Caused by Multidrug-Resistant Bacteria”*

Due to the rise of antimicrobial resistance, it is essential to adopt integrated approaches, combining advanced molecular diagnostic techniques with antimicrobial stewardship strategies. These measures not only optimize individualized treatment, minimizing the inappropriate use of antibiotics, but also play a crucial role in containing the spread of resistance in clinical and community settings.

This is how this Postgraduate Diploma is born, which will delve into the multifaceted causes of bacterial resistance to antibiotics, from the shortage of new antimicrobial agents, to socioeconomic influences and health policies. In doing so, practitioners will examine the global situation of antimicrobial resistance, with up-to-date statistics and regional trend analysis, equipping them with an informed and critical perspective to address this evolving phenomenon.

In addition, the study plan will focus on the management of patients in Intensive Care Units (ICU), emphasizing the accurate diagnosis and effective treatment of common infections caused by multidrug-resistant bacteria. Pharmacists will also acquire specialized skills to implement prevention strategies to reduce the incidence and spread of these critical infections in highly complex hospital environments, contributing to the comprehensive management of antimicrobial resistance in the clinical setting.

Finally, the syllabus will focus on proteomics in Clinical Microbiology, providing advanced knowledge on protein separation and identification techniques, both qualitative and quantitative. In addition, bioinformatics tools for proteomic and genomic analysis will be applied, therefore strengthening the investigation of resistance mechanisms and the development of personalized therapeutic strategies.

The detailed resources will offer graduates an online methodology, allowing them to organize their study schedule according to their personal and professional commitments. In addition, the advanced Relearning system will be incorporated, which facilitates deep understanding of key concepts through strategic repetition. Therefore, they will be able to learn at their own pace and fully master the latest scientific evidence available.

This **Postgraduate Diploma in Clinical and Molecular Management of Infections Caused by Multidrug-Resistant Bacteria** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Microbiology, Medicine and Parasitology
- ♦ The graphic, schematic and eminently practical contents with which it is conceived gather scientific and practical information on those disciplines that are indispensable for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*You will be prepared to lead scientific and clinical initiatives that promote progress in the management of infections caused by Multidrug-Resistant Bacteria, through the extensive library of multimedia resources offered by TECH"*

“

*You will delve into advanced protein separation and identification techniques, both qualitative and quantitative, essential for understanding bacterial resistance at the molecular level. What are you waiting for to enroll?"*

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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 education programmed to learn 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 course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*You will examine the various causes of antimicrobial resistance, ranging from shortages of new antibiotics to socioeconomic factors and public health policies. With all TECH's quality guarantees!*

*You will acquire specialized knowledge on the diagnosis and treatment of the most frequent infections in critical environments, such as the ICU, thanks to the best teaching materials, at the technological and educational forefront.*



# 02

# Objectives

The main objective of the university program will be to prepare pharmacists with advanced knowledge of the causes and mechanisms of antimicrobial resistance, providing effective tools for the diagnosis, treatment and prevention of these complex infections. Therefore, professionals will be prepared to implement evidence-based strategies, optimizing the use of antibiotics, contributing to epidemiological surveillance and promoting infection control practices in clinical settings. This will ensure safer and more effective health care for patients affected by Multidrug-Resistant Bacteria.







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*You will be equipped with specialized knowledge on the causes and mechanisms of bacterial resistance, as well as advanced molecular diagnostic and proteomic techniques applicable in clinical practice”*



## General Objectives

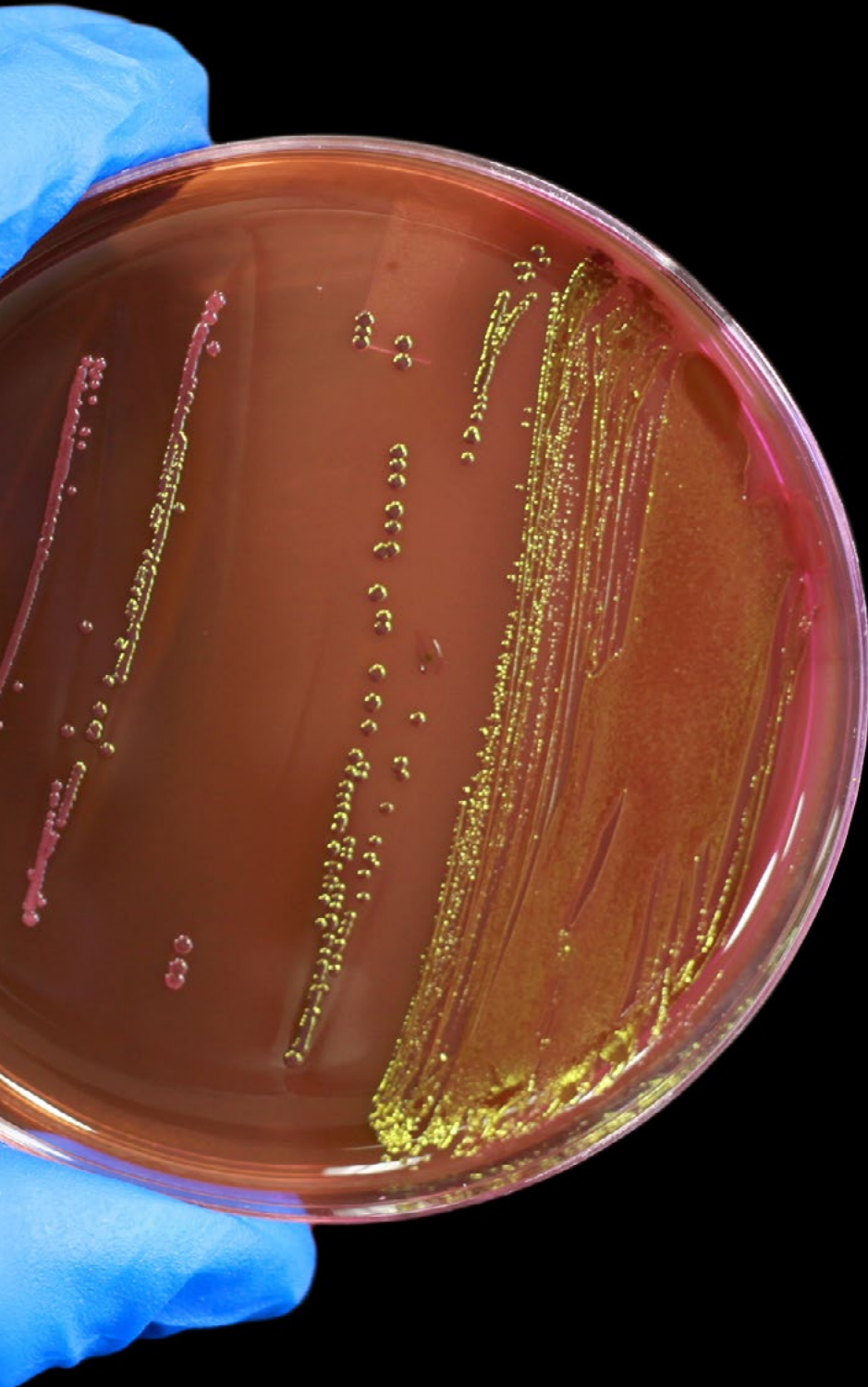
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- ◆ Understand how bacterial resistance evolves as new antibiotics are introduced into clinical practice
- ◆ Substantiate the colonization and infection of patients in Intensive Care Units (ICUs), the different types and the risk factors associated with infection
- ◆ Evaluate the impact of Nosocomial Infections in the critically ill patient, including the importance of risk factors and their impact on length of stay in the ICU
- ◆ Substantiate the importance of Proteomics and Genomics in the Microbiology laboratory including recent advances and technical and bioinformatics challenges



*Don't miss this unique opportunity that only TECH offers you! You will develop critical skills for the management and prevention of infections in hospital settings, especially in Intensive Care Units (ICU)"*





## Specific Objectives

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### Module 1. Multidrug-Resistant Bacteria in Human Pathology

- ♦ Evaluate the causes of antibiotic resistance, from the lack of new antibiotics, to socioeconomic factors and health policies
- ♦ Examine the current status of antibiotic resistance in the world, including global statistics and trends in different regions

### Module 2. Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)

- ♦ Acquire specialized knowledge on the diagnosis and treatment of common infections in ICUs
- ♦ Develop skills for the prevention of Multiresistant Bacterial Infections in the ICU

### Module 3. Proteomics in Clinical Microbiology

- ♦ Delve into qualitative and quantitative techniques for protein separation and identification
- ♦ Apply bioinformatics tools for Proteomics and Genomics

# 03

# Course Management

The lecturers have been selected for their outstanding experience and knowledge in key areas of Microbiology, Parasitology, Immunology and Intensive Care Medicine. In fact, they are highly qualified and recognized professionals in the academic and clinical field, with an outstanding track record in the research and treatment of infectious diseases caused by Multidrug-Resistant Bacteria. In addition, these experts will offer rigorous theoretical specialization, based on up-to-date scientific evidence, and an invaluable practical perspective, sharing real clinical cases and actively participating in the development of essential practical skills.



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*TECH faculty will provide pharmacists with the tools necessary to address emerging challenges in antimicrobial resistance, fostering dynamic and collaborative learning”*

## Management



### Dr. Ramos Vivas, José

- ♦ Director of the Banco Santander-Universidad Europea del Atlántico Chair in Innovation
- ♦ Researcher at the Center for Innovation and Technology of Cantabria (CITICAN)
- ♦ Academic of Microbiology and Parasitology at the European University of the Atlantic
- ♦ Founder and former director of the Cellular Microbiology Laboratory of the Valdecilla Research Institute (IDIVAL)
- ♦ PhD in Biology from the University of León
- ♦ Doctor in Sciences from the University of Las Palmas de Gran Canaria
- ♦ Degree in Biology from the University of Santiago de Compostela
- ♦ Master's Degree in Molecular Biology and Biomedicine from the University of Cantabria
- ♦ Member of: CIBERINFEC (MICINN-ISCIII), Member of the Spanish Society of Microbiology and Member of the Spanish Network of Research in Infectious Pathology

## Professors

### Dr. Ruiz de Alegría Puig, Carlos

- ♦ FEA at the University Hospital Marqués de Valdecilla, Cantabria
- ♦ Rotation in the Area of Molecular Biology and Fungi at the Hospital of Basurto, Bilbao
- ♦ Specialist in Microbiology and Immunology by the Marqués de Valdecilla University Hospital
- ♦ PhD in Molecular Biology and Biomedicine by the University of Cantabria
- ♦ Degree in Medicine and Surgery from the University of the Basque Country
- ♦ Member of: Spanish Society of Microbiology (SEM) and Center for Biomedical Research in Infectious Diseases Network CIBERINFEC (MICINN-ISCIII)

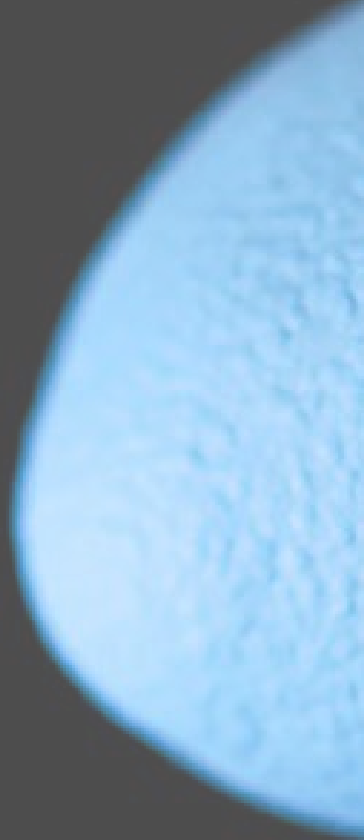
**Dr. Suberviola Cañas, Borja**

- ◆ Assistant Physician of the Intensive Care Medicine Service at the Marqués de Valdecilla University Hospital
- ◆ Principal Investigator and Collaborating Researcher in 6 projects with competitive funding
- ◆ Doctor en Medicina por la Universidad de Cantabria
- ◆ Specialty in Intensive Care Medicine and Resuscitation at the Marqués de Valdecilla University Hospital in Santander
- ◆ Degree in Medicine from the University of the Basque Country
- ◆ Master's Degree in Infectious Diseases in the Critically Ill Patient from the University of Valencia
- ◆ Member and Vice-coordinator of the Working Group on Infectious Diseases and Sepsis (GTEIS) of the Spanish Society of Intensive Care Medicine, Critical Care and Coronary Units (SEMICYUC)
- ◆ Member of the Group of Infectious Diseases in the Critical Patient of the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC)

04

# Structure and Content

This academic program will offer specialized qualification, addressing the crucial aspects of antimicrobial resistance and its clinical management. Therefore, the contents of the program will include a comprehensive analysis of the causes and mechanisms of bacterial resistance, from the lack of new antibiotics to socioeconomic factors and public health policies. The diagnosis and treatment of infections in critical environments such as intensive care units will also be discussed, with emphasis on strategies for the prevention and control of multidrug-resistant infections. In addition, advanced Proteomics and Genomics techniques applied to clinical microbiology will be examined.







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*The program has been specifically designed to prepare pharmacists in the complexities of antimicrobial resistance, from the world's best digital university, according to Forbes"*

## Module 1. Multidrug-Resistant Bacteria in Human Pathology

- 1.1. Mechanisms of Acquired Resistance to Antibiotics
  - 1.1.1. Acquisition of Resistance Genes
  - 1.1.2. Mutations.
  - 1.1.3. Acquisition of Plasmids
- 1.2. Mechanisms of Intrinsic Resistance to Antibiotics
  - 1.2.1. Blockage of Antibiotic Entry
  - 1.2.2. Modification of the Antibiotic Target
  - 1.2.3. Inactivation of the Antibiotic
  - 1.2.4. Antibiotic Expulsion
- 1.3. Chronology and Evolution of Antibiotic Resistance
  - 1.3.1. Discovery of Antibiotic Resistance
  - 1.3.2. Plasmids
  - 1.3.3. Evolution of Resistance
  - 1.3.4. Current Trends in the Evolution of Antibiotic Resistance
- 1.4. Antibiotic Resistance in Human Pathology
  - 1.4.1. Increased Mortality and Morbidity
  - 1.4.2. Impact of Resistance on Public Health
  - 1.4.3. Economic Cost Associated with Antibiotic Resistance
- 1.5. Multidrug-Resistant Human Pathogens
  - 1.5.1. Acinetobacter Baumannii
  - 1.5.2. Pseudomonas Aeruginosa
  - 1.5.3. Enterobacteriaceae
  - 1.5.4. Enterococcus Faecium
  - 1.5.5. Staphylococcus Aureus
  - 1.5.6. Helicobacter Pylori
  - 1.5.7. Campylobacter Spp
  - 1.5.8. Salmonellae
  - 1.5.9. Neisseria Gonorrhoeae
  - 1.5.10. Streptococcus Pneumoniae
  - 1.5.11. Hemophilus Influenzae
  - 1.5.12. Shigella Spp
- 1.6. Bacteria Highly Dangerous to Human Health: Update of the WHO List
  - 1.6.1. Critical Priority Pathogens
  - 1.6.2. High Priority Pathogens
  - 1.6.3. Pathogens with Medium Priority
- 1.7. Analysis of the Causes of Antibiotic Resistance
  - 1.7.1. Lack of New Antibiotics
  - 1.7.2. Socioeconomic Factors and Health Policies
  - 1.7.3. Poor Hygiene and Sanitation
  - 1.7.4. Health Policies and Antibiotic Resistance
  - 1.7.5. International Travel and Global Trade
  - 1.7.6. Dispersal of High-Risk Clones
  - 1.7.7. Emerging Pathogens with Resistance to Multiple Antibiotics
- 1.8. Antibiotic Use and Abuse in the Community
  - 1.8.1. Prescription
  - 1.8.2. Acquisition
  - 1.8.3. Misuse of Antibiotics
- 1.9. Current Status of Antibiotic Resistance in the World
  - 1.9.1. Global Statistics
  - 1.9.2. Central and South America
  - 1.9.3. Africa
  - 1.9.4. Europe
  - 1.9.5. North America
  - 1.9.6. Asia and Oceania
- 1.10. Perspectives on Antibiotic Resistance
  - 1.10.1. Strategies to Mitigate the Problem of Multidrug-Resistance
  - 1.10.2. International Actions
  - 1.10.3. Actions at the Global Level

## Module 2. Management of Patients with Multidrug-Resistant Bacterial Infections in Intensive Care Units (ICU)

- 2.1. Colonization and Infection of Patients in ICUs
  - 2.1.1. Types of ICUs
  - 2.1.2. Epidemiology
  - 2.1.3. Risk Factors Associated with Infection in ICUs
- 2.2. Impact of Nosocomial Infections in the Critically Ill Patient
  - 2.2.1. Importance of Nosocomial Infections in ICUs
  - 2.2.2. Risk Factors for Nosocomial Infections
    - 2.2.2.1. Patient Factors
    - 2.2.2.2. Factors of the ICU Environment
    - 2.2.2.3. Factors Related to the Healthcare Personnel
  - 2.2.3. Impact of Nosocomial Infections in Immunocompromised Patients
  - 2.2.4. Impact on Length of Stay in the ICU
- 2.3. Pneumonia Associated with Mechanical Ventilation
  - 2.3.1. Etiology
  - 2.3.2. Diagnosis
  - 2.3.3. Treatment
- 2.4. Urinary Tract Infections Associated with Catheters
  - 2.4.1. Etiology
  - 2.4.2. Diagnosis
  - 2.4.3. Treatment
- 2.5. Primary Bacteremias and Catheter-Related Bacteremias
  - 2.5.1. Etiology
  - 2.5.2. Diagnosis
  - 2.5.3. Treatment
- 2.6. Pseudomembranous Colitis
  - 2.6.1. Etiology
  - 2.6.2. Diagnosis
  - 2.6.3. Treatment
- 2.7. Infections by Opportunistic Pathogens
  - 2.7.1. Etiology
  - 2.7.2. Diagnosis
  - 2.7.3. Treatment
- 2.8. Appropriate Use of Antibiotics
  - 2.8.1. Programs for the Optimization of Antibiotic use (PROA) in the ICU
  - 2.8.2. Antibiotic Therapy Strategies for the Treatment of Gram-Negative Patients
  - 2.8.3. Antibiotic Therapy Strategies for the Treatment of Gram-Positive Patients
  - 2.8.4. Antibiotic Therapy Strategies for the Treatment of Co-Infections
- 2.9. Strategies for the Prevention of BMR Infections in the ICU
  - 2.9.1. Hygiene Measures
  - 2.9.2. Infection Control Measures
  - 2.9.3. Protocols and Clinical Practice Guidelines
  - 2.9.4. Education and Training of ICU Personnel
  - 2.9.5. Participation of Patients and their Families
- 2.10. Infection Prevention Strategies in the ICU
  - 2.10.1. Infection Prevention Strategies in the ICU According to the Focus
    - 2.10.1.1. Pneumonia
    - 2.10.1.2. Bacteremia
    - 2.10.1.3. Urinary Infection
  - 2.10.2. Evaluation and Quality Indicators in the Prevention of Infections
  - 2.10.3. Evaluation and Continuous Improvement Tools
  - 2.10.4. Successful Examples of Infection Prevention in ICUs

### Module 3. Proteomics in Clinical Microbiology

- 3.1. Proteomics in the Microbiology Laboratory
  - 3.1.1. Evolution and Development of Proteomics
  - 3.1.2. Importance in Microbiological Diagnosis
  - 3.1.3. Proteomics of Multi-Resistant Bacteria
- 3.2. Qualitative Protein Separation Techniques
  - 3.2.1. Two-Dimensional Electrophoresis (2DE)
  - 3.2.2. DIGE Technology
  - 3.2.3. Applications in Microbiology
- 3.3. Quantitative Protein Separation Techniques
  - 3.3.1. Isotopic Labelling
  - 3.3.2. High Performance Liquid Chromatography (HPLC)
  - 3.3.3. Mass Spectrometry (MS)
    - 3.3.3.1. MALDI-TOF Technologies in the Clinical Microbiology Laboratory
      - 3.3.3.1.1. VITEK®MS System
      - 3.3.3.1.2. MALDI Biotyper® System
- 3.4. MALDI-TOF Applications in Clinical Microbiology
  - 3.4.1. Identification of Microorganisms
  - 3.4.2. Characterization of Antibiotic Resistance
  - 3.4.3. Bacterial Typing
- 3.5. Bioinformatics Tools for Proteomics
  - 3.5.1. Proteomic Databases
  - 3.5.2. Protein Sequence Analysis Tools
  - 3.5.3. Visualization of Proteomic Data
- 3.6. Genomics in the Microbiology Laboratory
  - 3.6.1. Evolution and Development of Genomics
  - 3.6.2. Importance in Microbiological Diagnosis
  - 3.6.3. Genomics of Multi-Resistant Bacteria
- 3.7. Types of Sequencing
  - 3.7.1. Sequencing of Genes with Taxonomic Value
  - 3.7.2. Sequencing of Genes of Taxonomic Value
  - 3.7.3. Bulk Sequencing





- 3.8. Applications of Massive Sequencing in Clinical Microbiology
  - 3.8.1. Whole Bacterial Genome Sequencing
  - 3.8.2. Comparative Genomics
  - 3.8.3. Epidemiological Surveillance
  - 3.8.4. Microbial Diversity and Evolution Studies
- 3.9. Bioinformatics Tools for Genomics
  - 3.9.1. Genomic Databases
  - 3.9.2. Sequence Analysis Tools
  - 3.9.3. Visualization of Genomic Data
- 3.10. Future of Genomics and Proteomics in the Clinical Laboratory
  - 3.10.1. Recent and Future Developments in Genomics and Proteomics
  - 3.10.2. Development of New Therapeutic Strategies
  - 3.10.3. Technical and Bioinformatics Challenges
  - 3.10.4. Ethical and Regulatory Implications

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*You will acquire the necessary tools for accurate identification of microorganisms and personalization of treatment, therefore contributing to better management of these complex infections in your daily practice”*

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.



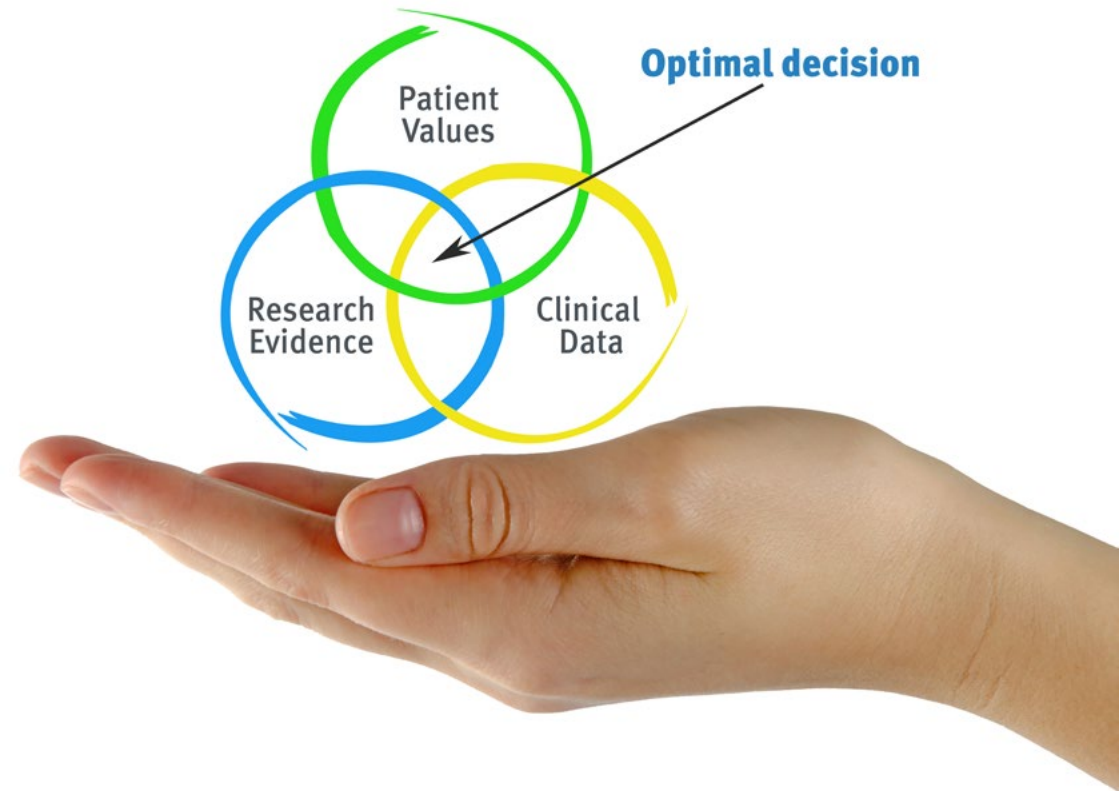
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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. Gervas, 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.

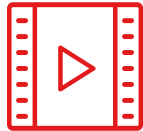
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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

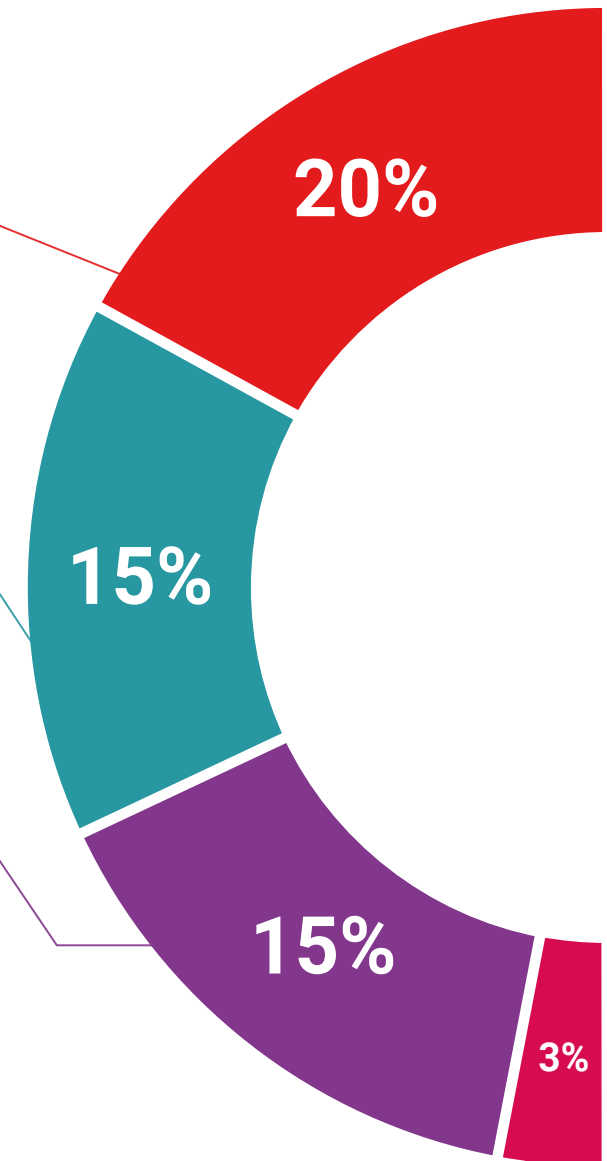
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

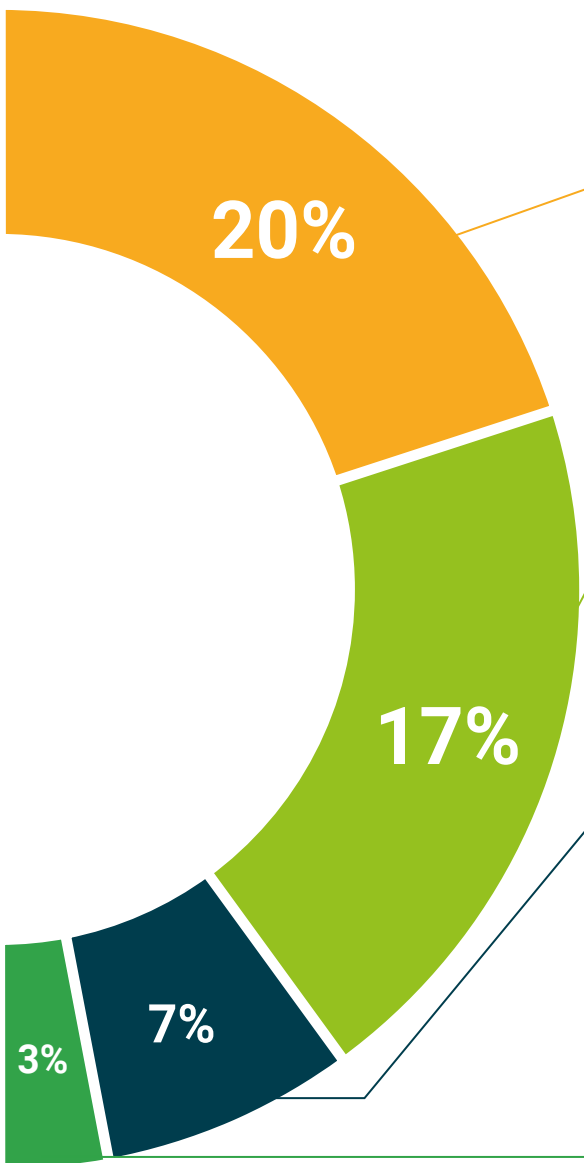
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



### 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 Clinical and Molecular Management of Infections Caused by Multidrug-Resistant Bacteria guarantees, in addition to the most accurate and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.





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

This private qualification will allow you to obtain a **Postgraduate Diploma in Clinical and Molecular Management of Infections Caused by Multidrug-Resistant Bacteria** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University**, is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

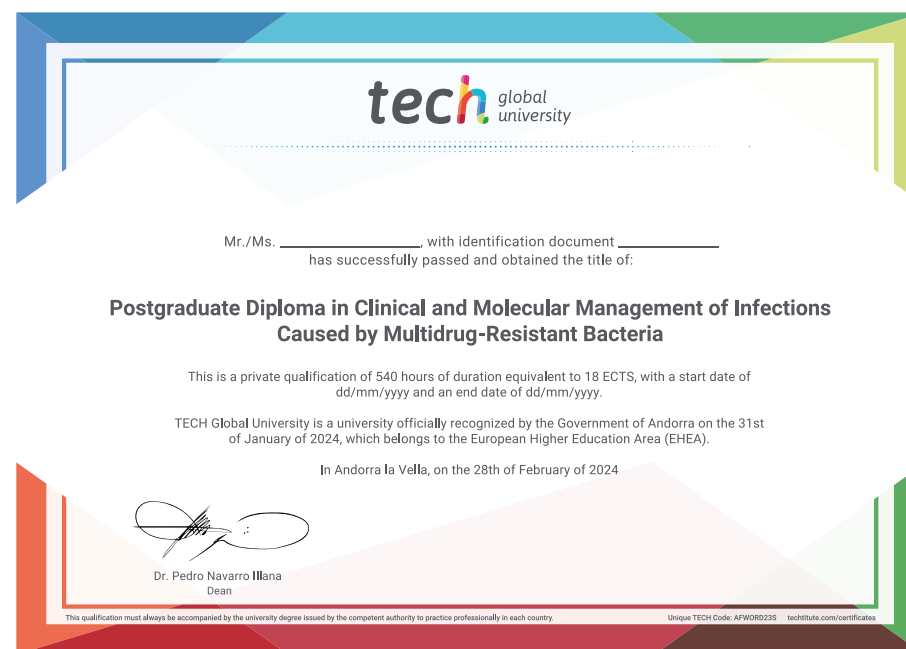
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Clinical and Molecular Management of Infections Caused by Multidrug-Resistant Bacteria**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



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





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