

# Postgraduate Diploma

## Respiratory Microbiota and Allergies in Pharmacy





## Postgraduate Diploma Respiratory Microbiota and Allergies in Pharmacy

Course Modality: **Online**

Duration: **6 months.**

Certificate: **TECH Technological University**

**18 ECTS Credits**

Teaching Hours: **450 hours.**

Website: [www.techtute.com/pharmacy/postgraduate-diploma/postgraduate-diploma-respiratory-microbiota-allergies-pharmacy](http://www.techtute.com/pharmacy/postgraduate-diploma/postgraduate-diploma-respiratory-microbiota-allergies-pharmacy)

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# 01

# Introduction

Scientific research in the field of Microbiota has been booming in recent decades, aimed both at the study of its characteristics and its impact on our health. The study of human microbiota opens the door to the knowledge of multiple diseases, especially the so-called functional diseases, with the microbiome being researchers' main workhorse. Aware of this, TECH professionals have designed this Postgraduate Diploma aimed at training pharmacists to be able to understand the functioning of the respiratory Microbiome and its relevance to allergic processes. All this will make them much more competent professionals, prepared to work in pharmacy or in research with greater guarantees of success.





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*Knowledge of the Human Microbiota at the respiratory level is a skill increasingly in demand by pharmaceutical institutions”*



Numerous pieces of scientific evidence have implicated the intestinal microbiome and its metabolic potential in various pathological conditions in recent years, giving rise to new therapeutic strategies to control and regulate this ecosystem. The study of this ecosystem is a field that is rapidly advancing scientifically, and it is universally accepted that to achieve an adequate state of health it is also necessary to have a "healthy" Microbiota.

Microbiota undergoes changes as a consequence of the influence of multiple factors, diet, lifestyle and pharmacological treatments generating, among others, which alter the bacterial ecosystem and may cause abnormal interaction with the organism, and it is related to certain processes: allergies, acute and chronic intestinal diseases, obesity and metabolic syndrome, neurological diseases, dermatitis and other alterations in the dermis, and even some types of cancer.

Consequently, the Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy provides easy access to information and the interest among professionals on topics related to Microbiota, its Eubiosis and Dysbiosis, and the problems related to them.

Furthermore, during the training course, the use of Probiotics and Prebiotics will be discussed in depth, as well as the growing market launch of new products with very specific strains for very specific problems and diseases related to the respiratory system.

All this makes it necessary for Pharmacy professionals to be up to date with all the scientific advances in this field, in order to offer the patient more precise information on the subject, guiding them to recover and maintain bacterial Eubiosis and, thus, maintain a good state of health, in addition to collaborating positively with the recommended medical treatment.

Thus, pharmacists will be much better prepared to offer effective solutions, both in their daily work in pharmacy and in the field of research. This, in addition to increasing your skills, will make you a prestigious professional.

This **Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy** comprises the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ Practical cases presented by Respiratory Microbiota and Allergy experts.
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ♦ Latest developments in Respiratory Microbiota.
- ♦ It contains practical exercises where the self-evaluation process can be carried out to improve learning.
- ♦ Special focus on innovative methodologies in Respiratory Microbiota and Allergies
- ♦ All of this will be complemented by 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.



*TECH offers you a compendium of the best quality content so that you can train with the best guarantees of success"*



*Don't miss the opportunity to improve your skills as a pharmacist by taking this Postgraduate Diploma that will open the doors to your professional growth"*

The program includes in its teaching staff professionals belonging to the field of Medicine and Pharmacy, who bring to this training the experience of their work, in addition to recognized specialists from prestigious reference societies and 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 Professional will be assisted by an innovative Interactive Video System, developed by renowned and vastly experienced experts in Pharmacy and Microbiotics.

*The Postgraduate Diploma allows training through simulated environments, which provide immersive learning programmed to train for real situations.*

*This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work while increasing your knowledge in this field.*



# 02 Objectives

The main objective of the program is the development of theoretical and practical learning, so that the professional can practically and rigorously master the study of Microbiotics in daily professional practice. Consequently, the Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy responds to the continuous professional demand for quality training in this area, which serves as a means for them to use microbiological therapy and probiotics as a solution for patient problems at all ages.







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*The training has been designed with the best educational technology. This will ensure you train and update your knowledge in the best possible way”*



## General Objectives

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- ♦ This Postgraduate Diploma fulfills a need in today's society, a quality and updated training program that allows for the use of microbiological therapy as a preventive or therapeutic tool for health maintenance.
- ♦ Offer a comprehensive and broad view of the current state of the field of human microbiota, in its broadest sense, the importance of the balance of this microbiota as a direct effect on our health, with the multiple factors that influence it positively and negatively.
- ♦ Arguments based in scientific evidence show how Microbiota and its interaction with many non-digestive pathologies of autoimmune nature, or its relation with the dysregulation of the immune system, its capacity for disease prevention and as a support to other medical treatments, are all currently being given a privileged position.
- ♦ The program will promote work strategies based on the integral approach of the patient as a reference model, not only focusing on the symptomatology of the specific pathology, but also looking at its interaction with Microbiota and how the latter may be influencing it.
- ♦ Encourage professional stimulus through continuing education and research.





## Specific Objectives

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### Module 1 Oral Microbiota and Respiratory Tract

- ◆ Understand the structure of oral ecosystems.
- ◆ Understand the causes for alterations of the oral microbial ecosystem, oral dysbiosis, and its relation to different oral disease states.
- ◆ Become familiar with the structure of the respiratory tract and composition of the Microbiota and Microbiome.
- ◆ Understand why the alteration of the Microbiota of the respiratory tract occurs and its relation to the different respiratory tract diseases.
- ◆ Learn the correct way to carry out therapeutic manipulation of the Microbiome of the oral cavity in prevention and treatment of diseases related to it.
- ◆ Learn the correct way to carry out a therapeutic manipulation of the Microbiome of the respiratory tract in the prevention and treatment of diseases related to it.
- ◆ Delve into the current lines of research related to oral Microbiota and its applications at the Pharmacy level.

### Module 2 Microbiota and Immune System

- ◆ Become acquainted with immune system physiology.
- ◆ Understand the implication of nutrition and lifestyle and their interaction with the immune system and the microbiota.
- ◆ Grasp the bidirectional relation between Microbiota and the neuroimmunoendocrine system.
- ◆ Understand Microbiota involvement in triggering nervous system diseases such as anxiety, depression, schizophrenia and others.
- ◆ Understand the functioning of the bowel-brain Microbiota.
- ◆ Delve deeper into the current lines of research on the subject.

### Module 3 Connection between Intolerances/Allergies and Microbiota.

- ◆ Know the reasons that cause changes in the Microbiota in patients with food exclusion diets: Eosinophilic Esophagitis (EoE)
- ◆ Delve deeper into the alteration and recovery of the intestinal Microbiota in patients with gluten intolerance and Celiac disease.
- ◆ Understand the role of probiotics in this sense.
- ◆ Delve into the current lines of research.



*Take the opportunity and take the step to get up-to-date on the latest developments in Respiratory Microbiota and Allergies”*

03

# Course Management

The program's teaching staff includes leading specialists in Human Microbiota and other related areas, who bring their years of work experience to this training program. In addition, other specialists of recognized prestige participate in its design and elaboration, completing the program in an interdisciplinary manner. All of which is carried out with the aim of providing Pharmacists with the most complete educational information and contents so that they can practice their profession with greater guarantees of success and treat patients with Respiratory problems with a deeper knowledge of the functioning of their microbiota in order to determine the most appropriate drugs for their treatment.







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*Learn from leading professionals the latest advances in procedures in the field of Respiratory Microbiota and its relevance to allergies”*



## Management



### Mrs. Fernández Montalvo, Mª Ángeles

- ♦ Degree in Biochemistry from the University of Valencia.
- ♦ Specialist Degree in Nutrition, Dietetics, and Diet Therapy.
- ♦ Specialist Degree in Microbiological Food Analysis.
- ♦ Specialist Degree in Nutrition, Food, and Cancer. Prevention and Treatment.
- ♦ Specialist Degree in Vegetarian, Clinical, and Sports Nutrition.
- ♦ Specialist in food intolerances and the study of the intestinal microbiota.
- ♦ Numerous courses on Intestinal Microbiota, methods of analysis, and applications.
- ♦ Diploma in Natural and Orthomolecular Medicine.
- ♦ Specialist Degree in the current use of Nutricosmetics and Nutraceuticals in general.
- ♦ Specialist Degree in point-of-sale management in Pharmacies and Parapharmacies.
- ♦ Member of the Spanish Society of Probiotics and Prebiotics (SEPyP).
- ♦ Member of the Spanish Society of Dietetics (SEDCA).
- ♦ Member of the Spanish Society of Nutrition (SEÑ).

## Professors

### Dr. Álvarez García, Verónica

- ◆ Degree in Medicine.
- ◆ Digestive system specialist at the Central Hospital of Asturias (HUCA).

### Dr. Díaz Martín, Juan José

- ◆ Pediatric gastroenterologist at the Central Hospital of Asturias (HUCA).
- ◆ Member of the Spanish Society of Pediatric Gastroenterology, Hepatology, and Nutrition.
- ◆ Associate Professor of Pediatrics at the University of Oviedo

### Dr. Fernández Madera, Juan José

- ◆ Degree in Medicine.
- ◆ Specialist in Clinical Allergology and Immunology.
- ◆ Specialist in Sports Medicine.

### Dr. Gonzalez Rodríguez, Silvia P.

- ◆ PhD in Medicine and Surgery from the University of Alcalá de Henares, specialty in Gynecology.
- ◆ Deputy Medical Research Coordinator and Clinical Chief of the Menopause and Osteoporosis Unit at the Velázquez Medical Cabinet (Madrid).

### Dr. Lombó Burgos, Felipe

- ◆ Doctor in Biology from the University of Oviedo.
- ◆ Full professor at the University of Oviedo.

### Dr. López López, Aranzazu

- ◆ Ph.D. in Biological Sciences
- ◆ Researcher in oral microbiology at the FISABIO Foundation.
- ◆ Public Health Research Center of Valencia.

### Dr. Méndez García, Celia

- ◆ Doctorate in Microbiology from the University of Oviedo.
- ◆ Research at Novartis Laboratories (Boston).

### Dr. Solís Sánchez, Gonzalo

- ◆ Neonatologist at the Central University Hospital of Asturias (HUCA).
- ◆ Researcher, Associate Professor at the University of Oviedo.

### Dr. Suárez Rodríguez, Marta

- ◆ Neonatologist at the Central University Hospital of Asturias (HUCA).
- ◆ Researcher and Professor in the Professional Master's Degree in Early Care and the Professional Master's Degree in Critical Care Nursing at the University of Oviedo and other training courses.

04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospital centers and universities in the country, who are aware of the relevance of up-to-date training to be able to prevent, detect, and treat pathologies related to alterations in human microbiota, and are committed to quality teaching through new educational technologies. All of which aimed at training Pharmacists to be much more competent and prepared to offer treatments that help and favor the respiratory microbiome of patients.



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*This Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy comprises the most complete and up-to-date scientific program on the market”*

## Module 1. Oral Microbiota and Respiratory Tract

- 1.1. Structure and Oral Ecosystems.
  - 1.1.1. Main Ecosystems that are Found in the Oral Cavity.
  - 1.1.2. Characteristics and Composition of Each of Them. Nares, Nasopharynx, and Oropharynx.
- 1.2. Alterations of the Oral Microbial Ecosystem: Oral Dysbiosis. Relationship with Different Oral Disease States.
  - 1.2.1. Cavities
  - 1.2.2. Halitosis
  - 1.2.3. Periodontal and Gingival Diseases.
  - 1.2.4. Peri-Implant Diseases
  - 1.2.5. Other Infectious Diseases: Candida Albicans
- 1.3. Influence of External Agents in Oral Eubiosis and Dysbiosis. Hygiene.
- 1.4. Structure of the Respiratory Tract and Composition of the Microbiota and Microbiome
  - 1.4.1. Upper Respiratory Tract (Nasopharynx, Middle Ear, Sinuses, and Tonsils)
  - 1.4.2. Lower Respiratory Tract (Trachea, Lungs, Bronchi, Bronchioles and Alveoli)
- 1.5. Factors that Regulate the Respiratory Microbiota:
  - 1.5.1. Microbial Immigration
  - 1.5.2. Microbe Elimination and Reproduction Rates
- 1.6. Alteration of the Respiratory Tract Microbiota and its Relation to the Different Respiratory Tract Diseases.
- 1.7. Therapeutic Manipulation of the Oral Cavity Microbiome in the Prevention and Treatment of Oral Cavity Related Diseases.
- 1.8. Therapeutic Manipulation of the Respiratory Tract Microbiome in the Prevention and Treatment of Respiratory Tract Related Diseases.
- 1.9. Current Lines of Research and Clinical Applications.





## Module 2 Microbiota and Immune System

- 2.1. Immune System Physiology
- 2.2. Nutrition and Lifestyle: Immune System and Microbiota Interaction
- 2.3. Functional Foods (Probiotics and Prebiotics), Nutraceuticals, and the Immune System
- 2.4. Bidirectional Relationship between Microbiota and Neuroimmunoendocrine System
- 2.5. Microbiota, Immunity and Nervous System Disorders: Anxiety, Depression, Autism, Schizophrenia, or Alzheimer's disease
- 2.6. The Gut-Microbiota-Brain Axis
- 2.7. Current Lines of Research

## Module 3. Relationship between Intolerances/Allergies and Microbiota

- 3.1. Microbiota Changes in Patients on Food Exclusion Diets: Eosinophilic Esophagitis (EoE)
- 3.2. Microbiota Changes in Patients on Food Exclusion Diets: Dairy intolerance (Lactose, Milk Proteins: Caseins, Albumins...)
- 3.3. Alteration and Recovery of the Intestinal Microbiota in Patients with Gluten Intolerance and Celiac Disease Role of Probiotics
- 3.4. Microbiota and Biogenic Amines
- 3.5. Current Lines of Research



*A unique, key, and decisive  
Training experience to boost your  
professional development"*

05

# Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used 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 Re-learning, 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

In a given clinical situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is abundant scientific evidence on the effectiveness of the method. Pharmacists learn better, more quickly and more sustainably over time.

*With TECH you can 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 potential 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 achieve the assimilation of concepts, but also develop their mental capacity through exercises to evaluate real situations and apply their knowledge.
2. The learning process has a clear focus on 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.





## Re-Learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

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 Re-learning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best Spanish-speaking online university (Columbia University).

With this methodology we have trained more than 115,000 pharmacists with unprecedented success, in all clinical specialties. Our 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 old.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Hence, we combine each of these elements concentrically.

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



In this program you will have access to the best educational material, prepared with you in mind:



### Study Material

After a complex production process, we transform the best content into high-quality educational and audiovisual multimedia. We select the best syllabus and make it available to you. Everything you need to acquire in-depth knowledge of a discipline, from A to Z. Lessons written and chosen by specialists in each of the disciplines.



### Surgical techniques and clinical procedures on video

We bring you closer to the newest techniques, to the latest scientific advances, and to the forefront of medical news. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



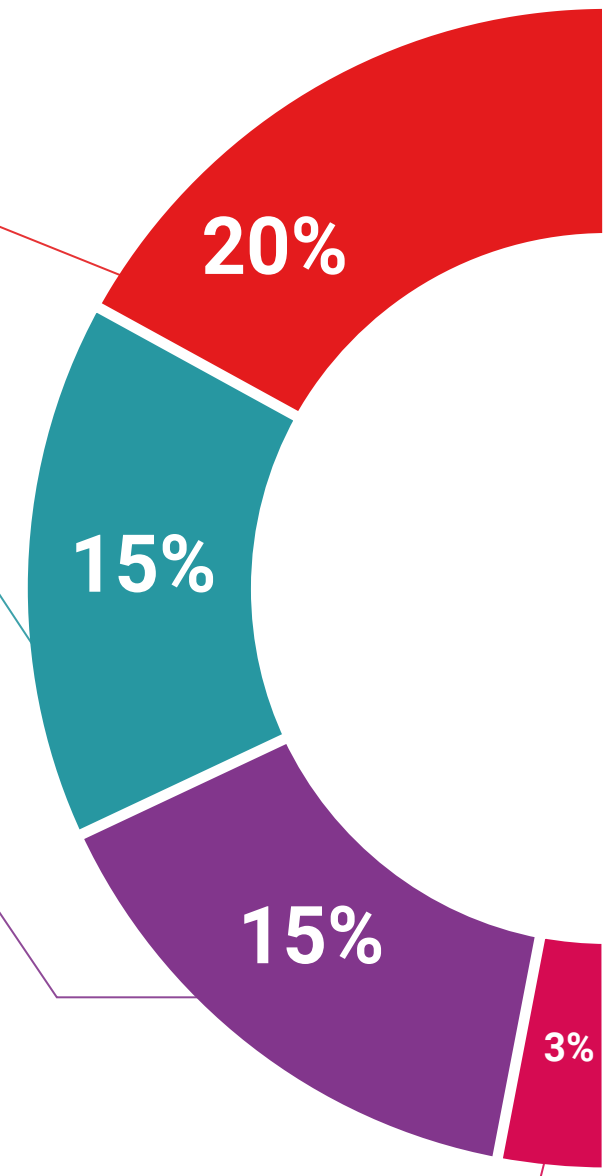
### Interactive Summaries

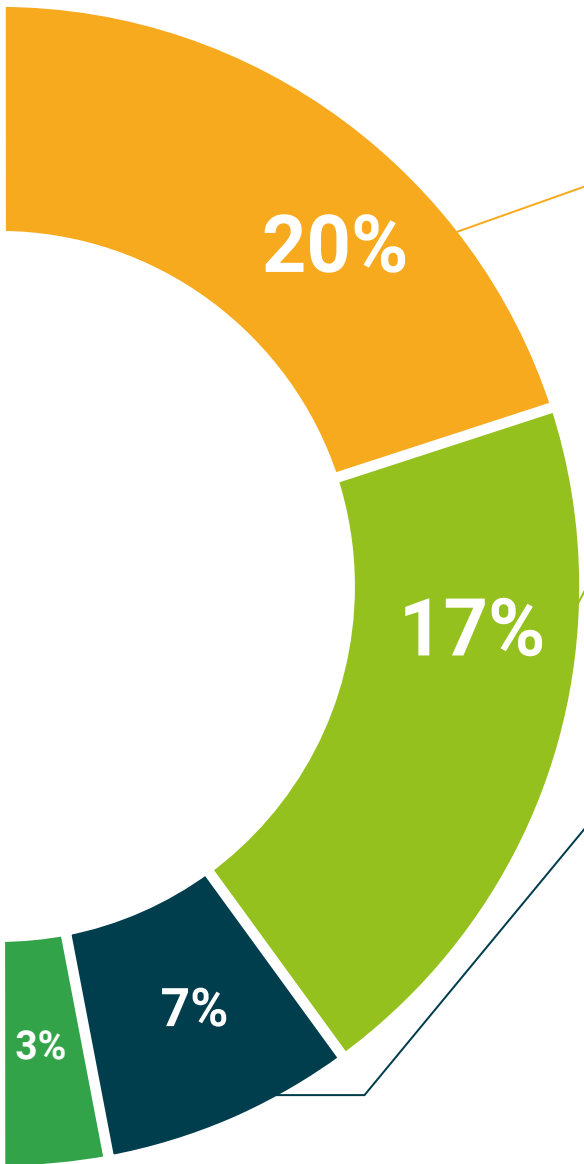
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge. This unique training system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



### Additional Reading

Recent articles, consensus documents, international guides... in our virtual library you will have access to everything you need to complete your training.





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

Through the narratives of expert professionals, it is possible to acquire a high degree of understanding of the most frequent problematic situations. The professional's healthcare practice is not alien to the context in which it takes place. If we want to train ourselves to improve our professional practice, this training must be situated within the context in which it takes place.



**Testing & Re-testing**

We periodically evaluate and re-evaluate your knowledge throughout this program through activities and evaluative exercises.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an expert strengthens knowledge and recall, and generates confidence in our future difficult decisions



**Quick Action Guides**

One of the most important functions of our team is to select those contents considered essential and present them in the form of worksheets or quick action guides to facilitate their understanding.





06

# Certificate

The **Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy** guarantees, in addition to the most rigorous and up-to-date education, access to a diploma issued by **TECH Technological University**.





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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This **Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy** comprises the most complete and up-to-date scientific program on the market.

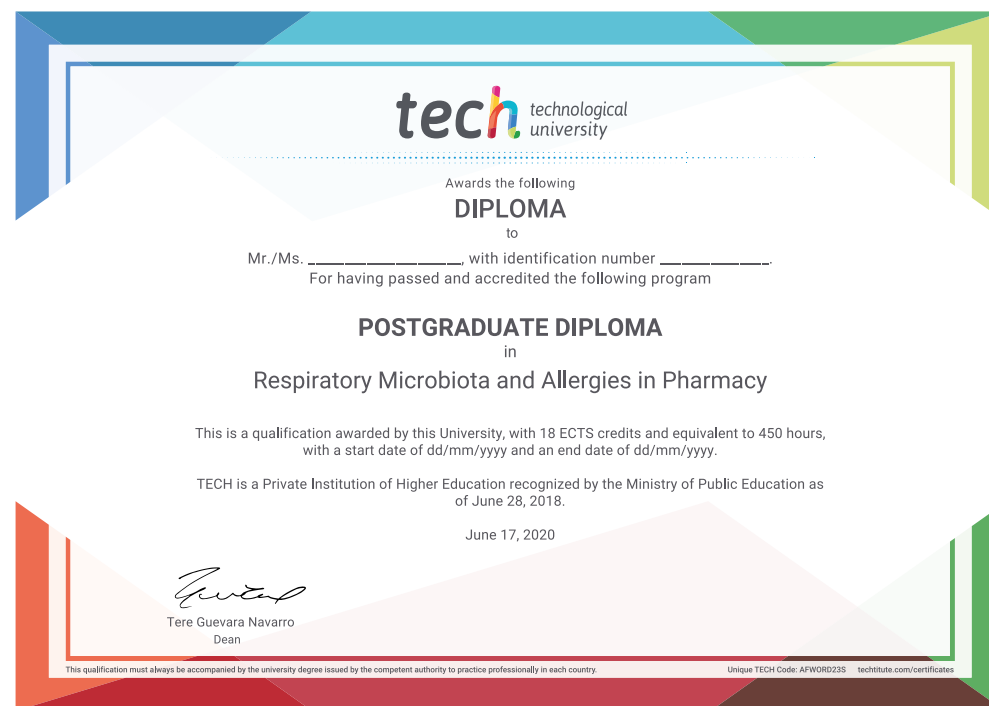
After the student has passed the evaluations, they will receive their corresponding certificate issued by **TECH Technological University via tracked delivery**.

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

Title: **Postgraduate Diploma in Respiratory Microbiota and Allergies in Pharmacy**

ECTS: 18

Official Number of Hours: 450



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

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development languages  
virtual classroom



**Postgraduate Diploma**  
Respiratory Microbiota and  
Allergies in Pharmacy

Course Modality: Online

Duration: 6 months.

Certificate: TECH Technological University

18 ECTS Credits

Teaching Hours: 450 hours.

# Postgraduate Diploma

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