

# Postgraduate Certificate

## Microbiota and the Immune System





## Postgraduate Certificate Microbiota and the Immune System

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/physiotherapy/postgraduate-certificate/microbiota-immune-system](http://www.techtute.com/us/physiotherapy/postgraduate-certificate/microbiota-immune-system)

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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 course that aims to train physiotherapists to be able to understand what the Microbiota are, their involvement in our immune system and in our health. All this will make them much more competent professionals, prepared to apply physical therapies that help the immune system recover and to maintain healthy.



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*TECH puts the most comprehensive collection of content on the market at your fingertips. In this way we contribute to helping you become a first class physiotherapist”*



Numerous scientific evidences have implicated the respiratory microbiome and its potential impact on various disease states in recent years. All this has given rise to new therapeutic strategies aimed at controlling and regulating this ecosystem. The study of this ecosystem is a field of rapid scientific progress, and it is universally accepted that in order to achieve an adequate state of health it is also necessary to have a "healthy" microbiota.

Our microbiota undergoes changes as a consequence of the influence of multiple factors, diet, lifestyle, pharmacological treatments etc., generating alterations in this bacterial ecosystem. This abnormal interaction that the organism could have with 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.

In this sense, this Postgraduate Certificate in Microbiota and the Immune System focuses on providing professionals with the necessary information to understand the implication of the implication of our bacterial system in the maintenance of our immune system and to know, at a general level, our microbiota, its eubiosis and dysbiosis and the problems related to it. Thus, the physiotherapist will learn how, through physical treatment, the immune system can recover and be maintained.

Also, during the course of the training, the aspects that trigger the balance and imbalance of the microbiota and the use of probiotics and prebiotics as a means of healing from these imbalances will be discussed in depth. In the same way, we will study the launching on the market of various products with very specific strains for very specific problems and diseases related to problems in the microbial system.

This Postgraduate Certificate includes cutting-edge contents, gathering the latest advances in the study of the microbiota and its relationship with the immune system. This will allow physiotherapy professionals to be up to date with all the scientific advances in this regard, to offer the patient more accurate information on the subject, guiding them to recover and maintain this bacterial Eubiosis through physiotherapeutic treatment.

This **Postgraduate Certificate in Microbiota and the Immune System** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ◆ Development of case studies presented by experts in Microbiota.
- ◆ The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- ◆ New developments on Microbiota.
- ◆ It contains practical exercises where the self-evaluation process can be carried out to improve learning
- ◆ With special emphasis on innovative methodologies in Microbiota.
- ◆ 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



*Improve your knowledge in Microbiota and Immune System through this program, where you will find the best didactic material, as well as real cases"*

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*This Postgraduate Certificate is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge on Microbiota and the Immune System, you will obtain a qualification from TECH Global University"*

The program includes, in its teaching staff, professionals belonging to the field of medicine and physiotherapy, 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 throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in microbiota.

*The Postgraduate Certificate allows you to study through simulated environments, which provide immersive learning programmed to train for real situations.*

*We train you through a 100% online education, ideal to enhance your skills and become a prestigious physiotherapist.*



# 02 Objectives

The main objective of the program is the development of theoretical and practical learning, so that the professional can master in a practical and rigorous way the study of microbiota in the daily practice of their profession. In this sense, the Postgraduate Certificate in Microbiota and the Immune System responds to the continuous demand of professionals for quality training in this area, which serves as a means to use physical therapy as a preventive or therapeutic tool in maintaining the health of their patients of all ages.







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*TECH employs the latest educational technology with the aim of providing you with in-depth training in Microbiota and the Immune System"*



## General Objectives

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- ◆ This Postgraduate Certificate meets a need of today's society, a quality and up-to-date training that allows the use of microbiological therapy as a preventive or therapeutic tool for the maintenance of health.
- ◆ Offer a complete and broad vision of the current situation in the area of the Human Microbiota, in its widest 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.
- ◆ Argue with the backing of scientific evidence how the microbiota is in a privileged position based on its interaction with many non-digestive pathologies, those of autoimmune nature or its relationship with immune system dysregulation, disease prevention and as a support to other medical treatments.
- ◆ 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 the microbiota and how it may be influencing it.
- ◆ Encourage professional stimulation through continuous education and research





## Specific Objectives

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- ◆ Know the Immune System Physiology
- ◆ Understand the implication of nutrition and lifestyle and their interaction with the immune system and the microbiota
- ◆ Know the bidirectional relationship between Microbiota and the neuroimmunoendocrine system
- ◆ Understand the involvement of the Microbiota in the triggering of nervous system diseases such as anxiety, depression and schizophrenia, among others
- ◆ Understand the functioning of the gut-brain Microbiota
- ◆ Deepen in the current lines of research on the subject



*Highly specialized goals in a program that has been created to train the best physiotherapy professionals in Microbiota and the Immune System"*

# 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 this, with the aim of providing physiotherapists with the most complete information and content on the educational scene, so that they can practice their profession with greater guarantees of success and treat patients with full knowledge of the functioning of their microbiota and microbiome, offering them therapeutic solutions that are much better adapted to their characteristics.







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*The best professionals are at the best university.  
Don't miss the opportunity to train with them."*



## International Guest Director

Dr. Harry Sokol is internationally recognized in the field of **Gastroenterology** for his research on the **gut microbiota**. With more than 2 decades of experience, he has established himself as a true scientific authority thanks to his numerous studies on the role of **microorganisms in the human body** and their impact on **chronic inflammatory bowel diseases**. In particular, his work has revolutionized medical understanding of this organ, often referred to as the «**second brain**.»

Among Dr. Sokol's contributions, he and his team have opened a new line of advances on the bacterium **Faecalibacterium prausnitzii**. In turn, these studies have led to crucial discoveries about its **anti-inflammatory effects**, opening the door to **revolutionary treatments**.

In addition, the expert is distinguished by his **commitment to the dissemination of knowledge**, whether by teaching academic programs at the Sorbonne University or by publishing works such as the **comic book** *The Extraordinary Powers of the Belly*. His scientific publications appear continuously in **world-renowned journals** and he is invited to **specialized congresses**. At the same time, he carries out his clinical work at the **Saint-Antoine Hospital** (AP-HP/University Hospital Federation IMPEC/Sorbonne University), one of the most renowned hospitals in Europe.

On the other hand, Dr. Sokol began his **medical studies** at Paris Cité University, showing early on a strong interest in **health research**. A chance meeting with the eminent Professor Philippe Marteau led him to **Gastroenterology** and the enigmas of the **Intestinal Microbiota**. Throughout his career, he also broadened his horizons by training in the United States, at Harvard University, where he shared experiences with **leading scientists**. Upon his return to France, he founded his **own team** where he researches on **Fecal Transplantation**, offering state-of-the-art therapeutic innovations.



## Dr. Sokol, Harry

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- Director of Microbiota, Gut and Inflammation at Sorbonne University, Paris, France
- Specialist Physician at the Gastroenterology Department of the Saint-Antoine Hospital (AP-HP), Paris, France
- Group Leader at the Institut Micalis (INRA)
- Coordinator of the Center of Microbiome Medicine of Paris FHU
- Founder of the pharmaceutical company Exeliom Biosciences (Nextbiotix)
- President of the Fecal Microbiota Transplantation Group
- Medical Specialist in different hospitals in Paris
- Doctorate in Microbiology at the Université Paris-Sud
- Postdoctoral Fellowship at the Massachusetts General Hospital, Harvard University Medical School
- Degree in Medicine, Hepatology and Gastroenterology at Université Paris Cité



*Thanks to TECH you will be able to learn with the best professionals in the world"*

## Management



### Ms. Fernández Montalvo, María Ángeles

- ◆ Degree in Biochemistry from the University of Valencia
- ◆ Specialist Degree in Nutrition, Dietetics and Diet Therapy
- ◆ Expert in Microbiological Food Analysis
- ◆ Expert in Nutrition, Food, and Cancer. Prevention and Treatment.
- ◆ Expert 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
- ◆ Expert in the current use of Nutricosmetics and Nutraceuticals in general.
- ◆ Expert 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. Lombó Burgos, Felipe

- ◆ Doctor in Biology from the University of Oviedo
- ◆ Professor at the university.

### Dr. López López, Aranzazu

- ◆ Ph.D. in Biological Sciences
- ◆ Researcher in oral microbiology at 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. Gonzalez Rodríguez, Silvia Pilar

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

### Dr. Álvarez García, Verónica

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

### Dr. Solís Sánchez, Gonzalo

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

### Dr. Suárez Rodríguez, Marta

- ◆ Neonatologist of the Central University Hospital of Asturias (HUCA)
- ◆ Researcher and Professor of 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.

### 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 Allergology and Clinical Immunology
- ◆ Specialist in Sports Medicine

04

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in the country, aware of the relevance of current training to prevent, detect and intervene in those pathologies related to alterations in the human microbiota, and committed to quality teaching through new educational technologies. All of this, with the aim of training physiotherapists to be much more competent and prepared to offer treatments that help and support the microbiome and the immune system of patients.





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*TECH experts have designed the most complete and up-to-date educational program on the market with the objective of training successful physiotherapists”*

## Module 1. Microbiota and the Immune System

- 1.1. Immune System Physiology
- 1.2. Nutrition and Lifestyle: Interaction with the Immune System and the Microbiota
- 1.3. Functional Foods (Probiotics and Prebiotics), Nutraceuticals, and Immune System
- 1.4. Bidirectional Relationship between Microbiota and Neuroimmunoendocrine System
- 1.5. Microbiota, Immunity, and Nervous System Disorders: Anxiety, Depression, Autism, Schizophrenia, or Alzheimers disease
- 1.6. The Gut-Microbiota-Brain Axis
- 1.7. Current Lines of Research







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*A unique, key, and decisive training experience to boost your professional development”*

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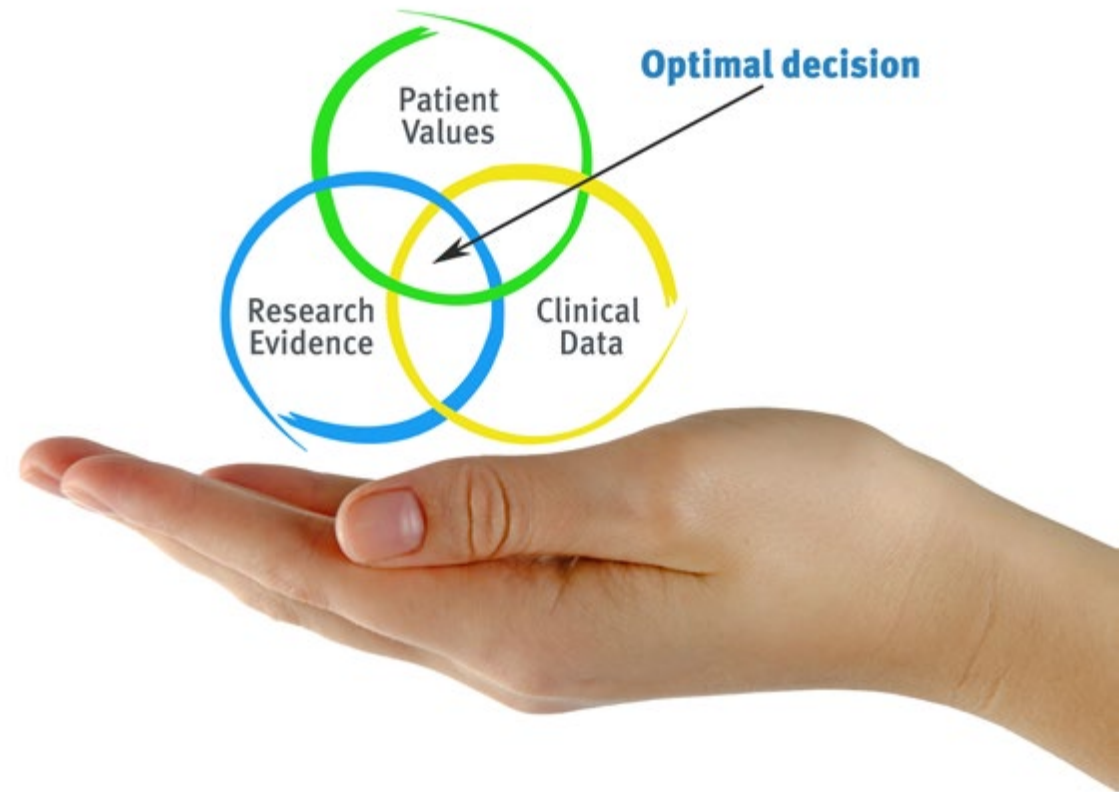
*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Physiotherapists/kinesiologists learn better, faster, 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, trying to recreate the real conditions of professional physiotherapy 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. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist 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

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.



*The physiotherapist/kinesiologist 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 we trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for 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 our 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 produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

These contents are then adapted in 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.



#### Physiotherapy Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current Physiotherapy techniques and procedures. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, students can watch them as many times as they want.



#### Interactive Summaries

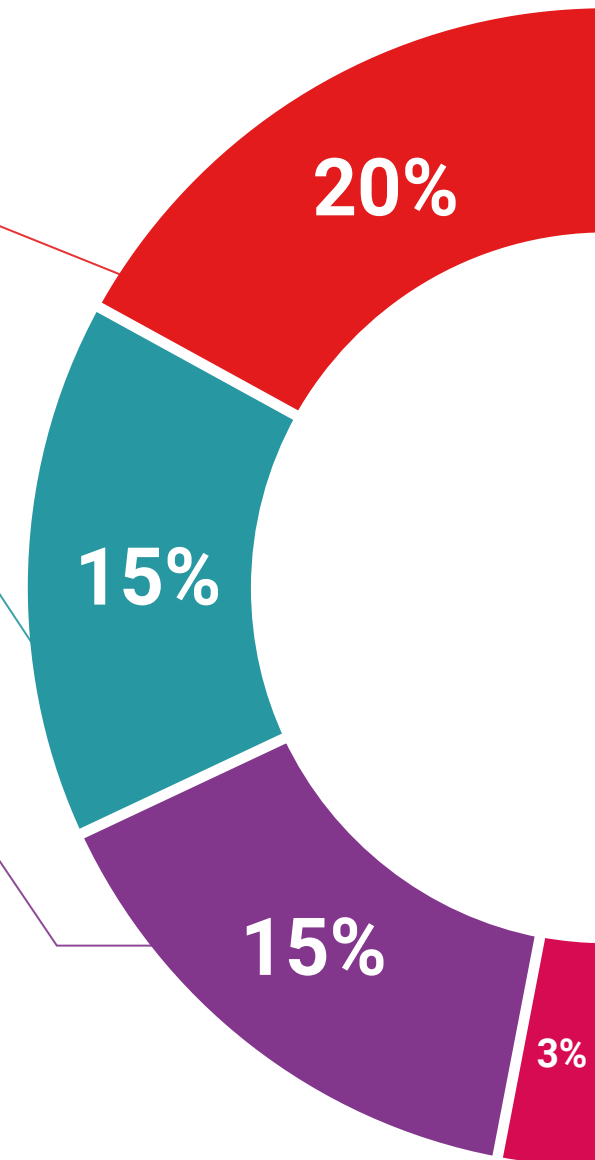
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".

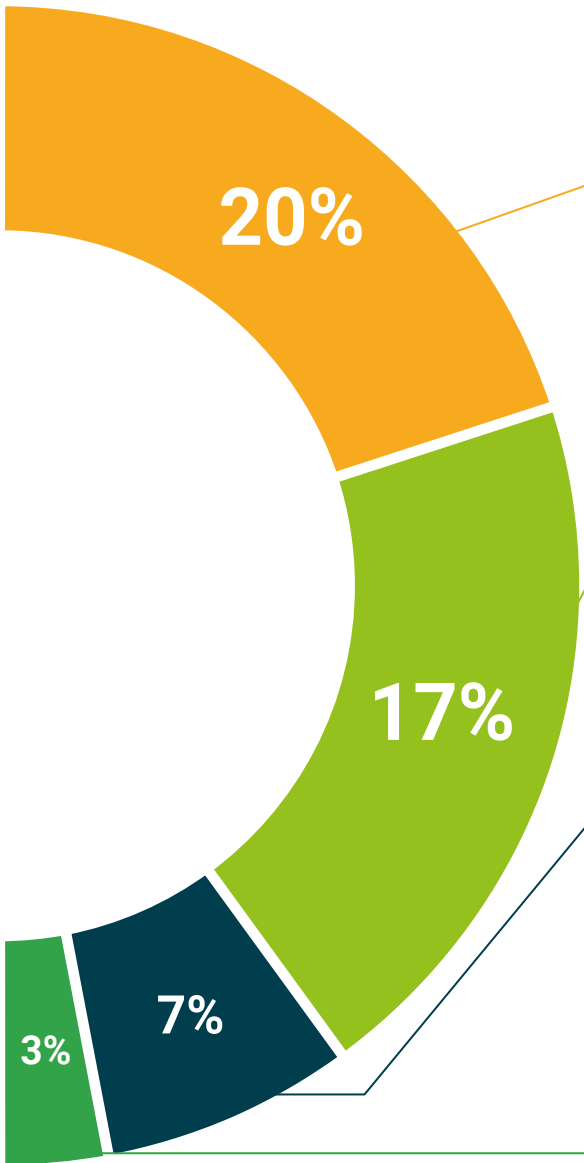


#### Additional Reading

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, TECH presents real cases in which the expert will guide students, 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 suggesting that observing third-party experts can be useful. 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 Certificate in Microbiota and the Immune System guarantees students, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate 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 program will allow you to obtain your **Postgraduate Certificate in Microbiota and the Immune System** 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** title 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 Certificate in Microbiota and the Immune System**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 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.

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



**Postgraduate Certificate**  
Microbiota and the  
Immune System

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## Microbiota and the Immune System

