Postgraduate Diploma

Genomic and Precision Oncology

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Postgraduate Diploma

Genomic and Precision Oncology

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **17 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-genomic-precision-oncology

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01

Introduction

The concept of genomic or precision oncology is not entirely new; physicians have been using blood type to tailor blood transfusions for over a century. What is different today is the rapid growth of genomic data that can be collected quickly and cheaply from the patient and the community at large, and the potential to gain insights from sharing that data.

This program will provide you with a sense of confidence in medical practice, which will help you grow personally and professionally"

The scale and complexity of genomic data dwarf the measurements traditionally used in laboratory testing. In recent years there has been an enormous development of informatics to analyze and interpret DNA sequencing, and it has created a gap between biological knowledge and its application to routine clinical practice. It is therefore necessary to educate, disseminate and incorporate these informatics techniques among the medical community in order to be able to interpret the massive analysis of data from publications, biological or medical databases and medical records, among others, and thus enrich the biological information available at the clinical level.

This machine learning will enable the development of precision oncology, in order to interpret genomic characteristics and find targeted therapies, or to identify risks to certain diseases and establish more individualized preventive measures. A fundamental objective of the program is to bring students closer to and disseminate computer knowledge, which is already applied in other fields of knowledge, but has minimal implementation in the medical world, despite the fact that for genomic medicine to become a reality, it is necessary to accurately interpret the huge volume of clinical information currently available and associate it with the biological data generated after a bioinformatic analysis. While this is a difficult challenge, it will allow the effects of genetic variation and potential therapies to be explored quickly, inexpensively and with greater precision than is currently possible.

Humans are not naturally equipped to perceive and interpret genomic sequences, to understand all the mechanisms, pathways and interactions that take place within a living cell, nor to make medical decisions with tens or hundreds of variables. To move forward, a system with superhuman analytical capabilities is required to simplify the work environment and show the relationships and proximities between variables. In genomics and biology, it is now recognized that it is better to spend resources on new computational techniques than on pure data collection, something that is possibly the same in medicine and, of course, oncology.

This **Postgraduate Diploma in Genomic and Precision Oncology** contains the most complete and up-to-date scientific program on the market. Its most notable features are:

- Case studies presented by experts in Genomic and Precision Oncology. Its graphic, schematic and practical contents provide scientific and practical information on those disciplines that are essential for professional practice
- News on genomic and precision oncology
- It contains practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies in Genomic and Precision Oncology
- 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

Update your knowledge with the Postgraduate Diploma in Genomic and Precision Oncology"

This Postgraduate Diploma may be the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge in Genomic and Precision Oncology, you will obtain a Postgraduate Diploma from TECH Global University"

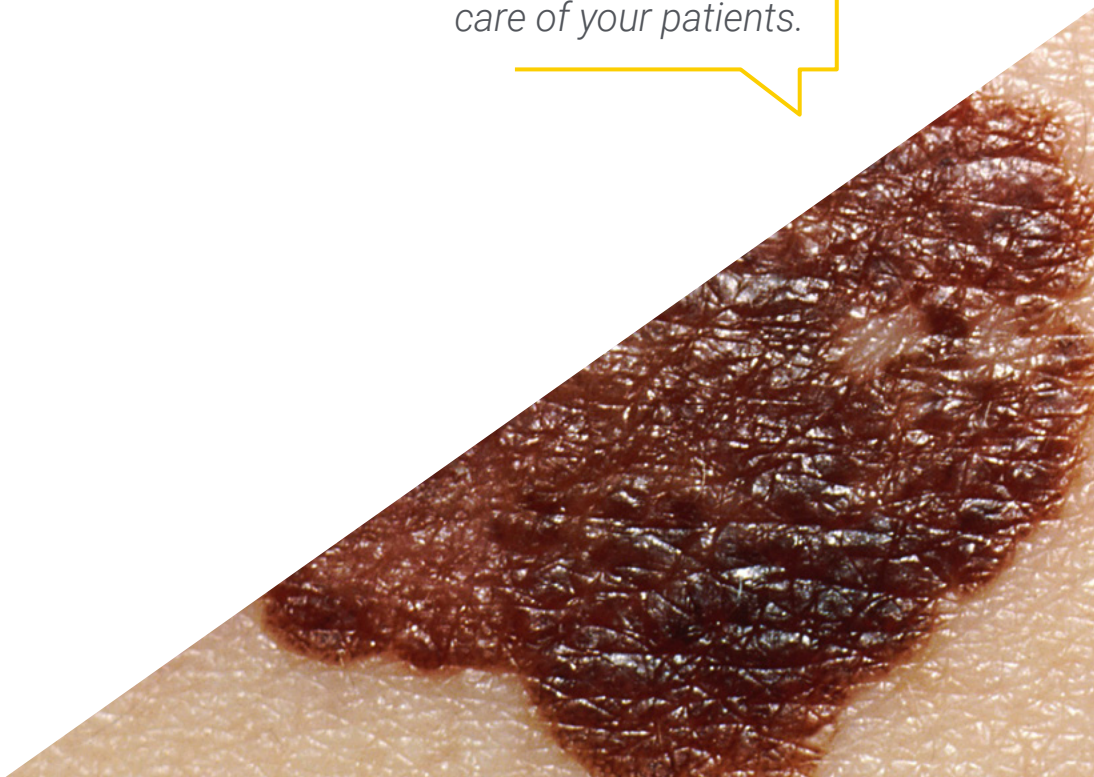
Increase your decision-making confidence by updating your knowledge through this Postgraduate Diploma.

Take the opportunity to learn about the latest advances in genomic and precision oncology and improve the care of your patients.

Its teaching staff includes professionals belonging to the field of genomic and precision oncology, who bring to this program the experience of their work, as well as renowned specialists belonging to reference societies and prestigious universities.

Thanks to its multimedia content elaborated with the latest educational technology, this Postgraduate Diploma will allow the professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to work in real situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise during the course. To this end, the student will be assisted by a novel interactive video system developed by recognized experts in the field of genomic and precision oncology with extensive teaching experience.



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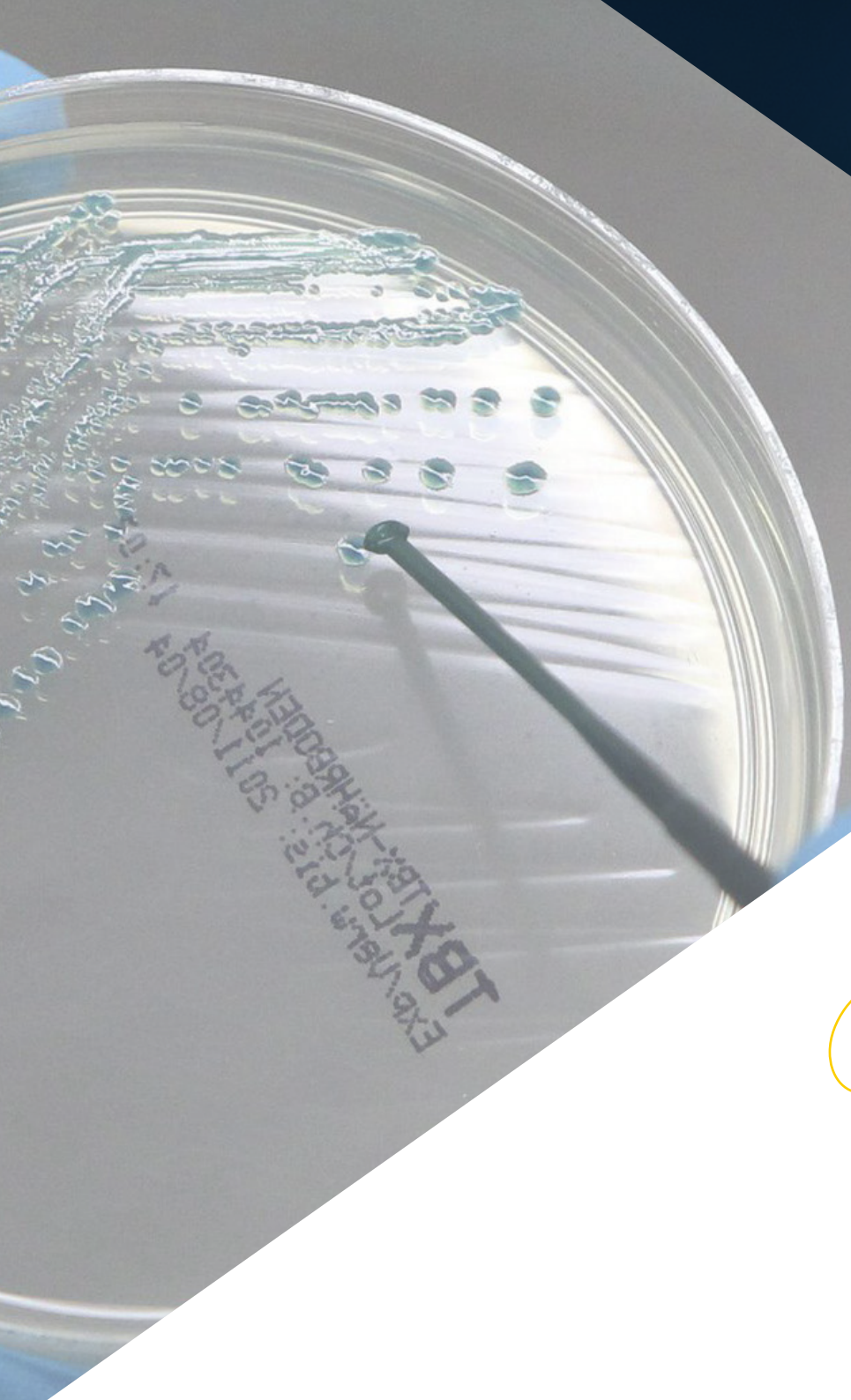
Objectives

The Postgraduate Diploma in Genomic and Precision Oncology is oriented to facilitate the performance of the physician dedicated to the treatment of oncological pathology in which it is necessary to accurately interpret the huge volume of clinical information currently available and associate it with the biological data generated after a bioinformatics analysis.



This Postgraduate Diploma is designed to help you update your knowledge in genomic and precision oncology, with the use of the latest educational technology, to contribute with quality and confidence to decision-making"

General Objective

- Be able to accurately interpret the volume of clinical information currently available and associated with the biological data generated after a bioinformatic analysis

Make the most of this opportunity and take the step to get up to date on the latest developments in Genomic and Precision Oncology"

Specific Objectives

Module 1. Molecular Biology

- Update knowledge on the molecular biology of cancer, in relation to different concepts such as genetic heterogeneity or microenvironment reprogramming
- Provide and expand knowledge on immunotherapy as an example of a clear scientific advance in translational research
- Learn about a new approach to the classification of the most frequent tumors based on genomic data available in The Cancer Genome Atlas (TCGA) Research Network

Module 2. Genomic or Precision Oncology

- Discuss the change in the current landscape with the introduction of genomic data into the biological understanding of tumors
- Explain how genomic classification provides independent information to predict clinical outcomes, and will give the biological basis for an era of personalized cancer treatment
- Learn the new genomic technologies currently used in DNA and RNA sequencing, based on the human genome sequence and made possible since the completion of the Human Genome Project, which has represented an unprecedented expansion of the capabilities of molecular genetics in genetic and clinical diagnostic research
- Discuss the bioinformatics process followed for the interpretation and application of biological data
- Analyze and interpret biological information at the molecular, cellular and genomic levels

Module 3. Changes in Current Clinical Practice and New Applications With Genomic Oncology

- Discuss and know how to interpret tumor mutational burden (TMB) as a genomic biomarker that has a significant impact on the landscape of cancer immunotherapy
- Learn how liquid biopsy of circulating DNA allows us to understand specifically what kind of molecular changes are happening in the tumor in real time
- Describe the current paradigm for incorporating genomic data into current clinical practice

Module 4. New Techniques in the Age of Genomics

- Put into practice the knowledge acquired for the interpretation of a genomic study in several cancer cases by extracting useful information that will help in decision-making
- Using several algorithms performed with the R language for the extraction of knowledge from Pubmed, DGIdb and Clinical Trials databases based on the search for genetic information in certain tumors

03

Course Management

The program's faculty includes leading experts in Genomic and Precision Oncology who bring their work experience to this program. Additionally, other recognized specialists participate in its design and preparation which means that the program is developed in an interdisciplinary manner

Learn about the latest advances in Genomic and Precision Oncology from leading professionals"

Management

Dr. Oruezábal Moreno, Mauro Javier

- Head of the medical Oncology Service at La Paz University Hospital since 2017
- Research Visitors at University of Southampton
- Master's Degree in Bioinformatics and Biostatistics UOC-UB
- Master's Degree in bioinformatics analysis by the University Pablo de Olavide
- Doctor of Medicine from the Complutense University of Madrid. Outstanding Cum Laude Qualification
- Member of the Spanish Society of Medical Oncology and GECP Group (Spanish Group of Lung Cancer)
- Specialist (MIR) in Medical Oncology, University Hospital San Carlos of Madrid
- Degree in Medicine and Surgery, Navarra University

Mr. Krallinger, Martin

- Head of the text mining unit at the Spanish National Cancer Research Center (CNIO)
- He has completed the selection process for the position of head of the text mining unit at the Barcelona Supercomputing Center (BSC)
- Expert in the field of biomedical and clinical text mining and linguistic technologies
- Expert in specific text mining applications for drug safety, molecular systems biology and oncology
- Participated in the implementation and evaluation of biomedical named entity recognition components, information extraction systems, semantic indexing of large datasets of heterogeneous document types
- Participated in the development of the first biomedical text annotation meta-server (biocreative metaserver - BCMS) and the BeCalm metaserver
- Organizer of BioCreative community evaluation challenges for the evaluation of natural language processing tools and has participated in the organization of biomedical text mining tasks in various international community challenges, including IberEval and CLEF

Professors

Mr. Alberich Martí, Ricardo

- Full university professor of Mathematics, Sciences and Computing (Director)
- Computer Science and Artificial Intelligence University of the Balearic Islands

Ms. Álvarez Cubero, María Jesús

- Professor of the Department of Biochemistry III and Immunology, University of Granada

Mr. Andrés León, Eduardo

- Head of the Bioinformatics Unit at the Institute of Parasitology and Biomedicine "Lopez-Neyra" - CSIC
- Degree in Biology and Molecular Biology from the Universidad Autónoma de Madrid

Ms. Astudillo González, Aurora

- Anatomic Pathology Service
- Associate Professor at the University of Oviedo linked to the Central University Hospital of Asturias. Scientific Director of the Principality of Asturias Biobank

Ms. Burón Fernández, María del Rosario

- Department of Internal Medicine, Infanta Cristina University Hospital

Mr. Carmona Bayonas, Alberto

- Medical Oncology Service, Morales Meseguer General University Hospital

Ms. Ciruelos, Eva M

- MD, PhD. D. Medical Oncology Service, 12 de Octubre University Hospital, Madrid
- HM CIOCC, Madrid

Mr. Galiana, Enrique de Andrés

- Departments of Mathematics, University of Oviedo

Mr. De la Haba Rodríguez, Juan

- Medical Oncology Department, University of Córdoba, Reina Sofía University Hospital, Córdoba, Spain

Mr. Fernández Martínez, Juan Luis

- Director of the Inverse Problems, Optimization and Machine Learning Group , Department of Mathematics. University of Oviedo

Ms. Figueroa, Angelica

- Institute of Biomedical Research A Coruña (INIBIC)
- Research Group Leader, Epithelial Plasticity and Metástasis

Ms. García Casado, Zaida

- Laboratory of Molecular Biology Valencian Institute of Oncology Foundation

Mr. García Foncillas, Jesús

- Jiménez Diaz, Foundation Medical Oncology Service

Mr. Gomila Salas, Juan Gabriel

- University Professor Mathematical Sciences and Computer Science and Artificial Intelligence, University of the Balearic Islands

Mr. González Gomáriz, José

- IdiSNA (Institute for Health Research of Navarra) Researcher in Training

Mr. Hoyos Simón, Sergio

- Medical Oncology Service at Rey Juan Carlos University Hospital

Mr. Intxaurrondo, Ander

- Life Sciences-Text Mining
- Barcelona Supercomputing Center

Ms. Jiménez-Fonseca, Paula

- Coordinator of the Digestive and Endocrine Tumors Section Medical Oncology. Asturias Central University Hospital

Ms. Lage Alfranca, Yolanda

- Jiménez Diaz, Foundation Medical Oncology Service

Mr. López Guerrero, José Antonio

- Medical Oncology Service, Valencian Institute of Oncology

Mr. López López, Rafael

- Head of the Medical Oncology Department
- Santiago de Compostela University Hospital Complex
- Translational Medical Oncology Group Health Research Institute

Mr. Martínez González, Luis Javier

- According to the precepts laid down by Camper Genomics Unit
- Pfizer center - University of Granada - Andalucía Government Center for Genomics and Oncology Research
- Pfizer - University of Granada - Andalucía Government Centre for Genomics and Oncological Research (GENYO)

Ms. Martínez Iglesias, Olaia

- Institute of Biomedical Research A Coruña (INIBIC)
- Research Group Leader, Epithelial Plasticity and Metastasis

Mr. Paramio Gonzalez, Jesús María

- CIEMAT Molecular Oncology Unit
- 12 de Octubre Research Institute of Madrid

Mr. Pascual Martínez, Tomás

- Barcelona Clinical Hospital
- Translational Genomics and Targeted Therapeutics in Solid Tumours Lab (IDIBAPS)

Ms. Pérez Gutiérrez, Ana María

- Student of the Master's Degree in the Clinical Bioinformatics Department of the Progress and Health Foundation -FPS- (Virgen del Rocío Hospital, Seville)
- PhD student in Biomedicine, UGR

Ms. Ribalta, Teresa

- MD, PhD. Chief, Anatomic Pathology Service, Hospital Sant Joan de Déu, Biobank
- Consultor, Anatomic Pathology Service, Hospital Clínic
- Professor of Pathology, Universitat de Barcelona

Mr. Sánchez Rubio, Javier

- Pharmacy Unit at Getafe University Hospital

Mr. Olivas Varela, José Ángel

- Deputy Director, Department of Information Technologies and Systems, Higher School of Computer Science

Mr.Torres, Arnau Mir

- Full university Professor of Mathematical Sciences and Computer Science and Artificial Intelligence , University of the Balearic Islands

Soares, Felipe

- Artificial Intelligence and Machine Learning Engineer at Apple
- Text Mining Research Engineer at the National Supercomputing Center in Barcelona

Mr. Rueda Fernández, Daniel

- Research Unit of the 12 de Octubre University Hospital, Madrid

Segura Ruiz, Víctor

- CIMA University of Navarra (Bioinformatics Platform) Unit Director

Vázquez García, Miguel

- Genome Informatics Group Leader
- Barcelona Supercomputing Center

Mr. Velastegui Ordoñez, Alejandro

- Medical Oncology Department

04

Structure and Content

The structure of the contents has been designed by a team of professionals from the best educational centers, universities, and companies in the national territory, aware of the relevance of current specialization in order to intervene in the training and support of students, and committed to quality teaching through new educational technologies.

This Postgraduate Diploma in Genomic and Precision Oncology contains the most complete and up-to-date scientific program on the market"

Module 1. Molecular Biology

1.1. Molecular Mechanisms of Cancer
- 1.1.1. Cellular Cycle
- 1.1.2. Detachment of Tumor Cells

1.2. Reprogramming of the Tumor Microenvironment
- 1.2.1. The Tumor Microenvironment: An Overview
- 1.2.2. MSD as a Prognostic Factor in Lung Cancer
- 1.2.3. TME in the Progression and Metastasis of Lung Cancer
  - 1.2.3.1. Cancer-Associated Fibroblasts (CAF)
  - 1.2.3.2. Endothelial Cells
  - 1.2.3.3. Hypoxia in Lung Cancer
  - 1.2.3.4. Inflammation
  - 1.2.3.5. Immune Cells
- 1.2.4. Contribution of TME to Therapeutic Resistance
  - 1.2.4.1. Contribution of TME to Radiotherapy Resistance
- 1.2.5. TME as a Target Treatment in Lung Cancer
  - 1.2.5.1. Future Directions

1.3. Tumor Immunology: The Bases of Immunotherapy in Cancer
- 1.3.1. Introduction to the Immune System
- 1.3.2. Tumor Immunology
  - 1.3.2.1. Tumor-Associated Antigens
  - 1.3.2.2. Identification of Tumor-Associated Antigens
  - 1.3.2.3. Types of Tumor-Associated Antigens
- 1.3.3. The Bases of Immunotherapy in Cancer
  - 1.3.3.1. Introduction to the Immunotherapeutic Approaches
  - 1.3.3.2. Monoclonal Antibodies in Cancer Therapy
    - 1.3.3.2.1. Production of Monoclonal Antibodies
    - 1.3.3.2.2. Types of Therapeutic Antibodies
    - 1.3.3.2.3. Mechanisms of Action of Antibodies
    - 1.3.3.2.4. Modified Antibodies
- 1.3.4. Non-Specific Immune Modulators
  - 1.3.4.1. Bacillus of Calmette-Guérin
  - 1.3.4.2. Interferon-α
  - 1.3.4.3. Interleucina-2
  - 1.3.4.4. Imiquimod

1.3.5. Other Approaches for Immunotherapy
1.3.5.1. Dendritic Cell Vaccines
1.3.5.2. Sipuleucel-T
1.3.5.3. CTLA-4 Blocking
1.3.5.4. Adoptive T-cell Therapy
1.3.5.4.1. Adoptive Cell Therapy With T-cell Clones
1.3.5.4.2. Adoptive Cell Therapy With Tumor-Infiltrating Lymphocytes
1.4. Molecular Mechanisms Involved in the Invasion and Metastasis Process

Module 2. Genomic or Precision Oncology

2.1. Usefulness of Gene Expression Profiling in Cancer
2.2. Molecular Subtypes of Breast Cancer
2.3. Prognostic-Predictive Genomic Platforms in Breast Cancer
2.4. Therapeutic Targets in Non-Small Cell Lung Cancer
2.4.1. Introduction
2.4.2. Molecular Detection Techniques
2.4.3. EGFR Mutation
2.4.4. ALK Translocation
2.4.5. ROS Translocation
2.4.6. BRAF Mutation
2.4.7. NRTK Rearrangements
2.4.8. HER2 Mutation
2.4.9. MET Mutation/Amplification
2.4.10. RET Rearrangements
2.4.11. Other Molecular Targets
2.5. Molecular Classification of Colon Cancer
2.6. Molecular Studies in Gastric Cancer
2.6.1. Treatment of Advanced Gastric Cancer
2.6.2. HER2 Overexpression in Advanced Gastric Cancer
2.6.3. Identification and Interpretation of HER2 Overexpression in Advanced Gastric Cancer
2.6.4. Drugs With Activity Against HER2
2.6.5. Trastuzumab in the First Line of Advanced Gastric Cancer
2.6.5.1. Treatment of HER2+ Advanced Gastric Cancer After Progression to Trastuzumab-Based Regimens
2.6.6. Activity of Other Anti-HER2 Drugs in Advanced Gastric Cancer
2.7. GIST as a Model of Translational Research: 15 Years of Experience
2.7.1. Introduction
2.7.2. Mutations of KIT and PDGFRA as Major Promoters in GIST
2.7.3. Genotype in GIST: Prognostic and Predictive Value
2.7.4. Genotype in GIST and Resistance to imatinib
2.7.5. Conclusions
2.8. Molecular and Genomic Biomarkers in Melanoma
2.9. Molecular Classification of Brain Tumors
2.10. Molecular and Genomic Biomarkers in Melanoma
2.11. Immunotherapy and Biomarkers
2.11.1. Landscape of Immunological Therapies in Cancer Treatment and the Need to Define the Mutational Profile of a Tumor
2.11.2. Checkpoint Inhibitor Biomarkers: PD-L1 and Beyond
2.11.2.1. The Role of PD-L1 in Immune Regulation
2.11.2.2. Clinical Trial Data and PD-L1 Biomarker
2.11.2.3. Thresholds and Assays for PD-L1 Expression: A Complex Picture
2.11.2.4. Budding Biomarkers
2.11.2.4.1. Tumor Mutational Burden (TMB)
2.11.2.4.1.1. Quantification of the Tumor Mutational Burden
2.11.2.4.1.2. Evidence of the Tumor Mutational Burden
2.11.2.4.1.3. Burden as a Predictive Biomarker
2.11.2.4.1.4. Burden as a Prognosis Biomarker
2.11.2.4.1.5. The Future of the Mutational Burden
2.11.2.4.2. Microsatellite Instability
2.11.2.4.3. Immune Infiltrate Analysis
2.11.2.4.4. Toxicity Markers
2.11.2.5. Immune Checkpoint Drug Development in Cancer
2.11.2.6. Available Drugs

Module 3. Changes in Current Clinical Practice and New Applications With Genomic Oncology

3.1. Liquid Biopsies: Fashion or Future?
- 3.1.1. Introduction
- 3.1.2. Circulating Tumor Cells
- 3.1.3. ctDNA
- 3.1.4. Clinical Applications
- 3.1.5. CtDNA Limitations
- 3.1.6. Conclusions and Future

3.2. Role of the Biobank in Clinical Research
- 3.2.1. Introduction
- 3.2.2. Is it Worth the Effort to Create a Biobank?
- 3.2.3. How to Begin Establishing a Biobank
- 3.2.4. Informed Consent for the Biobank
- 3.2.5. Collecting Samples for the Biobank
- 3.2.6. Quality Control
- 3.2.7. Access to Samples

3.3. Clinical trials: New Concepts Based on Precision Medicine
- 3.3.1. What Are Clinical Trials? What Sets Them Apart From Other Types of Research?
  - 3.3.1.1. Types of Clinical Trials
    - 3.3.1.1.1. By Their Objectives
    - 3.3.1.1.2. By The Number of Partaking Centers
    - 3.3.1.1.3. By Their Methodology
    - 3.3.1.1.4. By Their Level of Masking
- 3.3.2. Results of Clinical Trials in Thoracic Oncology
  - 3.3.2.1. Related to Survival Time
  - 3.3.2.2. Results Related to the Tumor
  - 3.3.2.3. Results Notified by the Patient
- 3.3.3. Clinical Trials in the New Age of Precision Medicine
  - 3.3.3.1. Precision Medicine
  - 3.3.3.2. Terminology Relate to the Design of Trials in the Era of Precision Medicine

3.4. Incorporation of Actionable Markers in Clinical Practice

3.5. Application of Genomics in Clinical Practice by Type of Tumor

3.6. Decision support Systems in Oncology Based on Artificial Intelligence

Module 4. New Techniques in the Age of Genomics

4.1. Understanding the New Technology: Next Generation Sequence (NGS) in Clinical Practice
- 4.1.1. Introduction
- 4.1.2. Background
- 4.1.3. Problems in the Application of Sanger Sequencing in Oncology
- 4.1.4. New Sequencing Techniques
- 4.1.5. Advantages of Using NGS in Clinical Practice
- 4.1.6. Limitations of Using NGS in Clinical Practice
- 4.1.7. Terms and Definitions of Interest
- 4.1.8. Types of Studies Depending on Their Size and Depth
  - 4.1.8.1. Genome
  - 4.1.8.2. Exomes
  - 4.1.8.3. Multigenic Panels
- 4.1.9. Stages of NGS Sequencing
  - 4.1.9.1. Preparing Samples and Libraries
  - 4.1.9.2. Preparing Templates and Sequencing
  - 4.1.9.3. Bioinformatic Processing
- 4.1.10. Annotation and Classification of Variants
  - 4.1.10.1. Population Databases
  - 4.1.10.2. Locus-Specific Databases
  - 4.1.10.3. Bioinformatic Predictors of Functionality

4.2. DNA Sequencing and Bioinformatic Analysis
- 4.2.1. Introduction
- 4.2.2. Software
- 4.2.3. Procedure
  - 4.2.3.1. Extracting Raw Sequences
  - 4.2.3.2. Aligning Sequences
  - 4.2.3.3. Alignment Refinement
  - 4.2.3.4. Variant Call
  - 4.2.3.5. Variant Filtering

4.3. RNA Sequencing and Bioinformatic Analysis
- 4.3.1. Introduction
- 4.3.2. Software
- 4.3.3. Procedure
  - 4.3.3.1. QC Evaluation of Raw Data
  - 4.3.3.2. RNAr Filtering
  - 4.3.3.3. Filtered Quality Control Data
  - 4.3.3.4. Quality Trimming and Adapter Removal
  - 4.3.3.5. Alignment of Reads to a Reference
  - 4.3.3.6. Variant Call
  - 4.3.3.7. Differential Gene Expression Analysis

4.4. ChIP-Seq Technology
- 4.4.1. Introduction
- 4.4.2. Software
- 4.4.3. Procedure
  - 4.4.3.1. CHiP-Seq Data Set Description
  - 4.4.3.2. Obtaining Information About the Experiment Using the GEO and SRA Websites
  - 4.4.3.3. Quality Control of the Sequencing Data
  - 4.4.3.4. Trimming and Filtering Reads
  - 4.4.3.5. Visualizing Results with the Integrated Genome Browser (IGV)

4.5. Big Data Applied to Oncology Genomics
- 4.5.1. The Process of Analysis Data

4.6. Genomic Servers and Databases of Genetic Variants
- 4.6.1. Introduction
- 4.6.2. Online Genomic Servers
- 4.6.3. Genomic Server Architecture
- 4.6.4. Recuperation and Data Analysis
- 4.6.5. Personalization

4.7. Annotation of Genetic Variants
- 4.7.1. Introduction
- 4.7.2. What is Variant Calling?
- 4.7.3. Understanding the VCF Format
- 4.7.4. Variant Identification
- 4.7.5. Variant Analysis
- 4.7.6. Predicting the Effect of the Variation of a Protein's Structure and Function

A unique, key and decisive program 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.**

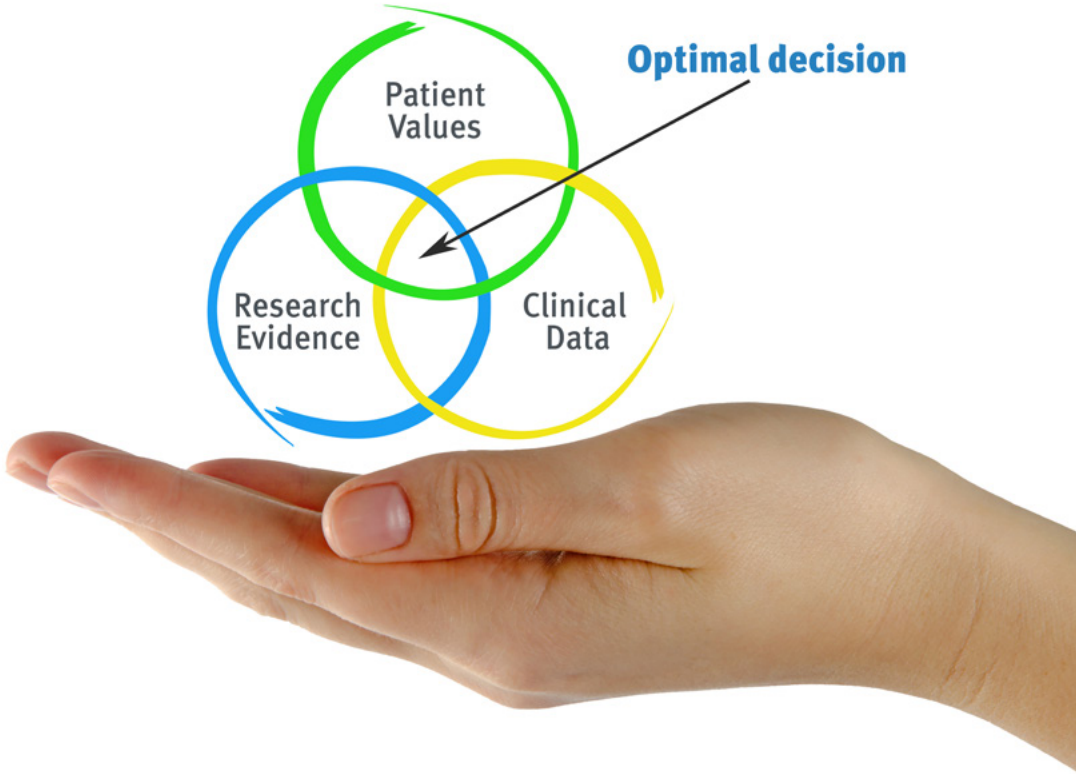
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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. Specialists 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 in the physician's professional practice.

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:

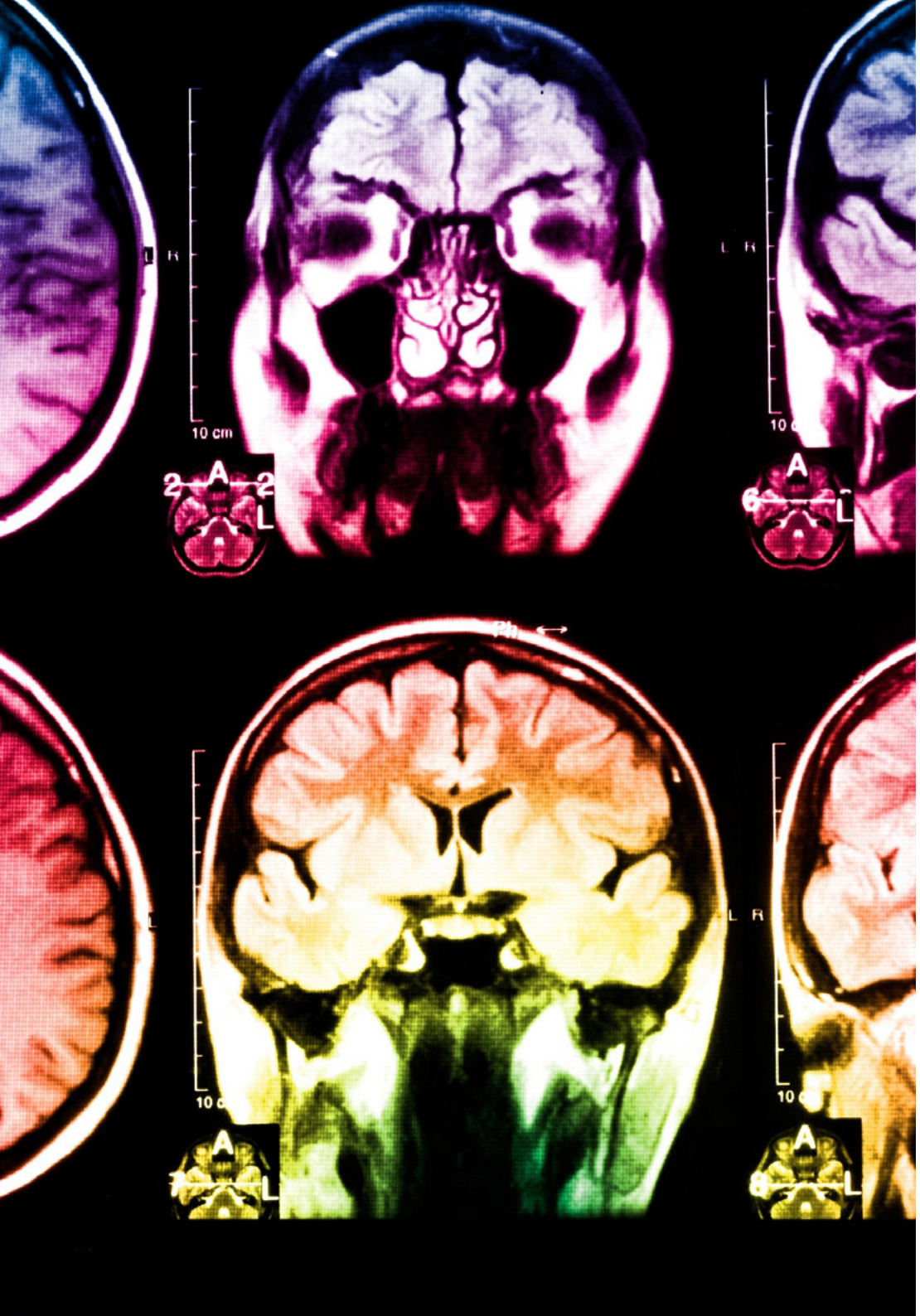
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better 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.

This 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, a real revolution with respect to the mere study and analysis of cases.

Professionals will learn through real cases and by resolving 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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. 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 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 produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

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.

Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

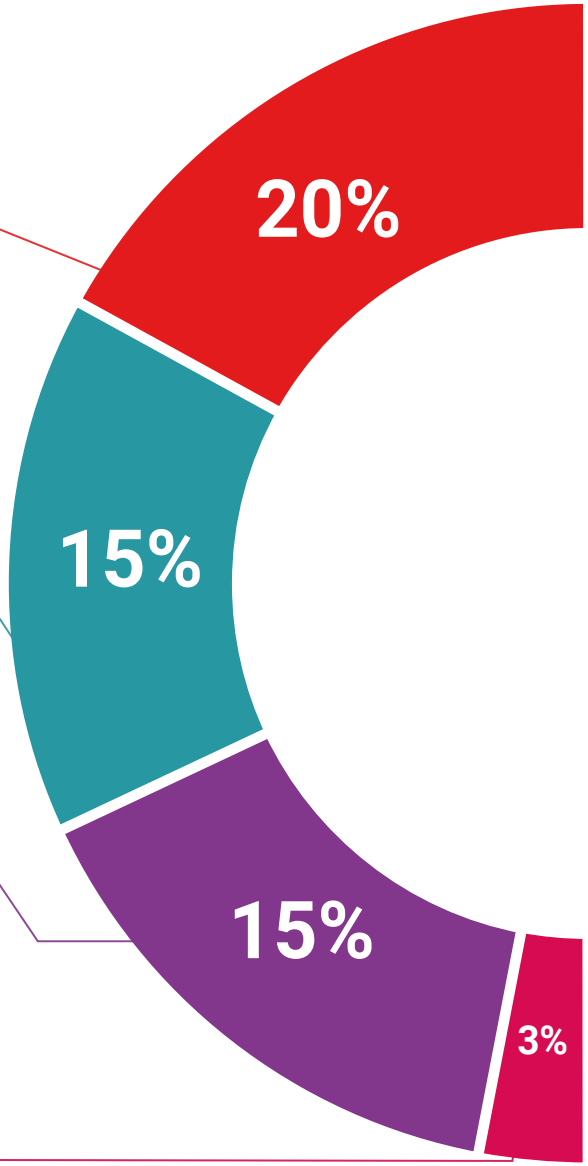
Interactive Summaries

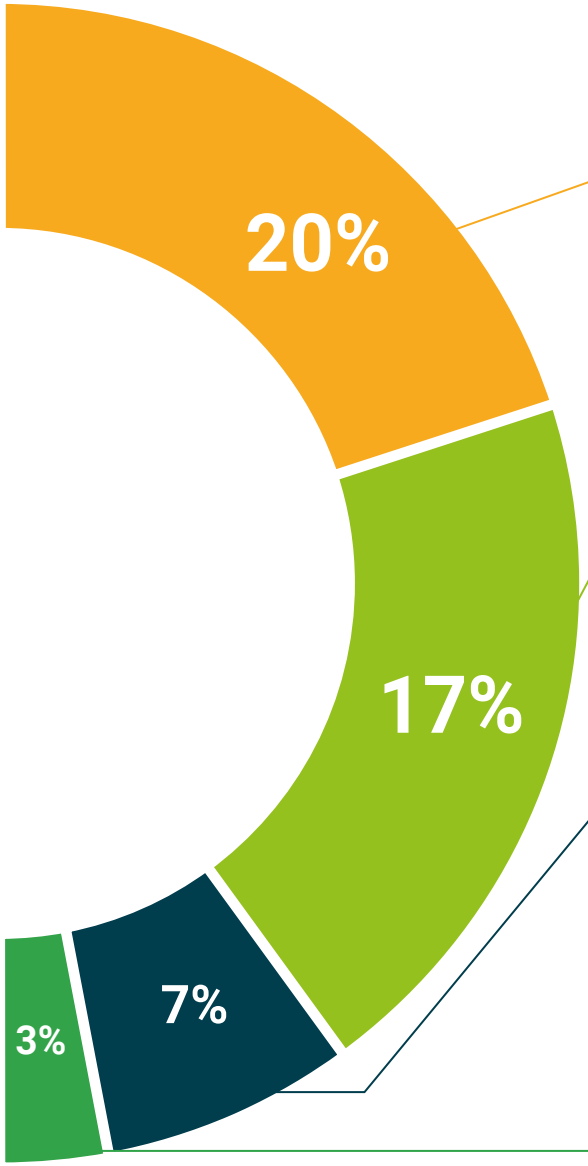
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 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 Genomic and Precision Oncology guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University

Successfully complete this program and receive your university degree without travel or laborious paperwork"

This private qualification will allow you to obtain a **Postgraduate Diploma in Genomic and Precision Oncology** 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 Genomic and Precision Oncology**

Modality: **online**

Duration: **6 months**

Accreditation: **17 ECTS**


tech global university

Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Genomic and Precision Oncology

This is a private qualification of 510 hours of duration equivalent to 17 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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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Postgraduate Diploma

Genomic and Precision Oncology

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **17 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Genomic and Precision Oncology

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