

SCIENTIFIC BASIS AND CLINICAL USES

# ADVANCED THERAPIES

**Directors:**

Prof. José María Moraleda Jiménez

Prof. Joan García López

Prof. Fermín Sánchez-Guijo Martín

Prof. Juan Bueren Roncero

Prof. Felipe Prosper Cardoso

Prof. Robert Sackstein

**SUMMER COURSE - FROM 11-15 OF JULY  
16TH EDITION - LOS ALCÁZARES  
MURCIA**

Place: Hotel 525. - Calle del Río Borines 58 - 30710 Los Alcázares- Murcia

Duration: 30 hours - Price: 160 € - Registration Deadline: 5/07/2022

More Information and Registration Form: [www.um.es/unimar](http://www.um.es/unimar)

UNIVERSIDAD DE  
MURCIA



Sociedad Española de  
Hematología y Hemoterapia

## DIRECTORS

### **Prof. José María Moraleda Jiménez**

Professor of Medicine. University of Murcia. Head Dpt. of Hematology and HSCT Program. Institute of Biomedical Research of Murcia - IMIB, Vigen de la Arrixaca University Hospital. Murcia, Spain.

### **Prof. Joan García López**

Scientific Director. Banc de Sang i Teixits. Catalonia. Spain. Vice-president International Society for Cellular and GeneTherapy.

### **Prof. Fermín Sánchez-Guijo Martín**

Professor of Hematology, University of Salamanca. Head, Cell Therapy Area, IBSAL-University Hospital of Salamanca. Vice-President Elect, ISCT. Spain.

### **Prof. Juan Bueren Roncero**

Division of Hematopoietic Innovative Therapies and Division of Cell Technology CIEMAT. University of Madrid. Advanced Therapies Unit, Jiménez Díaz Foundation Health Research Institute, Spain.

### **Prof. Felipe Prosper Cardoso**

Director of Cell Therapy Department. Co-director Hematology Department. University of Navarra. Navarra, Spain

### **Prof. Robert Sackstein**

MD,PhD. Senior Vice-President for Global Medical Affairs, Florida International University, Miami, FL Professor Emeritus, Harvard Medical School, Boston, MA.

## TARGET GROUP

Collective of health professionals and students: haematologists and physicians of any other specialty interested in advanced therapies, as well as health professionals, researchers and university students of health and health-related degrees.

Other target groups are not professionals: groups involved who benefit from the information being shared in this course, such as patient associations, industry, companies, students, as well as other people and sectors of the population, with curiosity in the scientific field, who want obtain objective, critical and useful information to lay the foundations of appropriate knowledge.

## AIMS

The aim of this course is the diffusion of knowledge about Advanced Therapies (gene therapy, somatic cell therapy, tissue engineering), and their therapeutic possibilities, with a special emphasis on their current applications in the field of genetic and neoplastic diseases as well as regenerative Medicine.

The course is intended to provide a review of current clinical applications of advanced therapies, a forum for scientific discussion with basic and clinical researchers that are experts in advanced therapies, and to present the achievements and challenges in this exciting and growing area of medical science.

### **Specific Course Objectives are:**

To analyze in depth the different types of advanced therapies and the biological properties that support its therapeutic potential.

To learn about advances in hematopoietic stem cell transplantation, as the first immune-cellular therapy to cure genetic and malignant diseases.

To learn the advances in gene therapy, immunotherapy with CAR cells, somatic cell therapies, and how to manufacture advanced cell therapies compliant with regulatory science to treat patients.

To present and discuss the current status of preclinical studies and clinical trials of advanced therapies to cure diseases.

## REGISTRATION RULES

Please complete the Registration Form at the official website:  
<https://www.um.es/unimar>

### **Payment Methods:**

Credit Card (Website).

Cash: only in person. Download the Payment form. Fill in the form and return it with your payment to Universidad Internacional del Mar. Banks: Sabadell, Bankia, Cajamar and Santander.

Once payment is made you will be enrolled in the course. Students must be enrolled and have a regular attendance to obtain the diploma or its equivalent.

## HEMATOPOIETIC STEM CELL TRANSPLANTATION. THE FIRST SUCCESSFUL CELL THERAPY

### 09:00-09:30 h. Opening Session

**Hon. Mr. Juan José Pedroño.**

Health Council of the Autonomous Community of the Region of Murcia. Murcia, Spain.

**Hon. Mr. José Luján Alcaráz.**

Rector of the University of Murcia. Murcia, Spain.

**Hon. Mr. Cristóbal Belda Iniesta.**

Director Institute of Health Carlos III (ISCIII). Madrid. Spain.

**Hon. Mr. Ramón García Sanz.**

President of the Spanish Society of Hematology and Hemotherapy (SEHH). Madrid. Spain.

### Morning Session

**Chair: Prof. José M. Moraleda.** Professor of Medicine. University of Murcia. Spain.

### 09:30-10:00 h. Inaugural conference: Past, present and future of cell therapy.

**Prof. Sergio Giralt.** Deputy Division Head, Division of Hematologic Malignancies; Melvin Berlin Family Chair in Multiple Myeloma. Memorial Sloan Kettering Cancer Center. New York. USA.

### 10:00-10:30 h. A New Operational Definition of the Human Hematopoietic Stem Cell.

**Prof. Robert Sackstein.** MD, PhD Senior Vice-President for Global Medical Affairs, Florida International University, Miami, FL Professor Emeritus, Harvard Medical School, Boston, MA.

### 10:30-10:45 h. Hematopoietic Stem Cell: Laboratory selection for transplants.

**Prof. Miguel Blanquer Blanquer.** Hematology Department. Institute of Biomedical Research of Murcia - IMIB, Virgen de la Arrixaca University Hospital. University of Murcia. Murcia, Spain.

### 10:45- 11:00 h. Discussion.

### 11:00-11:30 h. Coffee break.

### 11:30-11:50 h. The HLA system: key of the immune response.

**Prof. Alejandro Madrigal.** Professor of Haematology, UCL Cancer Institute. Honorary Consultant, Royal Free NHS Trust UCL Country Ambassador for México. London, UK.

### 11:50-12:10 h. Hematopoietic stem cell transplantation: basic principles.

**Prof. José M. Moraleda.** Professor of Medicine. University of Murcia. Head, Dpt of Hematology and HSCT Program. Institute of Biomedical Research of Murcia - IMIB, Virgen de la Arrixaca University Hospital. Murcia, Spain.

### 12:10-12:30 h. Graft versus host disease. Immune effects and cellular treatments.

**Prof. José Antonio Pérez Simón.** Professor of Hematology. Head Hematology Department. Institute of Biomedicine, Virgen del Rocío University Hospital. University of Sevilla, Spain.

### 12:30-12:50 h. Endothelial-cell related complications of SCT.

**Prof. Enric Carreras.** Medical Director of the José Carreras International Foundation. Barcelona, Spain.

### 12:50-13:10 h. Infectious complications in SCT.

**Prof. Rafael Duarte Palomino.** Department of Hematology. University Hospital Puerta de Hierro. Madrid, Spain.

### 13:10- 13:30 h. Discussion.

### 13:30-15:30 h. Lunch.

### Afternoon Session

**Chair: Prof. Robert Sackstein.** MD, PhD Senior Vice-President for Global Medical Affairs, Florida International University, Miami, FL. Professor Emeritus, Harvard Medical School, Boston.

### 15:30-16:00 h. Transplantation in Europe. Present and future.

**Prof. Anna Sureda.** President EBMT. Head Department of Hematology. ICO. Barcelona, Spain.

### 16:00-16:30 h. Improving SCT. What we know, what should we know.

**Prof. Sergio Giralt.** Deputy Division Head, Division of Hematologic Malignancies; Melvin Berlin Family Chair in Multiple Myeloma. Memorial Sloan Kettering Cancer Center. New York. USA.

### 16:30-17:00 h. Debate: Is the transplant going to survive with the new immunotherapies?

**Prof. Alejandro Madrigal.** Chair of Hematology. The Royal Free and University College Medical School. London,

**Prof. Anna Sureda.** President EBMT. Head Department of Hematology. ICO. Barcelona, Spain.

**Prof. Enric Carreras.** Medical Director of The Jose Carreras International Foundation. Barcelona.

**Prof. José A. Pérez Simón.** Head Hematology Dpt. University Hospital Virgen del Rocío. IBIS. University of Sevilla.

**Prof. Rafael Duarte.** Head Clinical Hematology. University Hospital Puerta de Hierro. Madrid.

### 17:00-18:00 h. Welcome students' reception.

# TUESDAY- 12 -JULY

## GENE THERAPY: SCIENTIFIC BACKGROUND AND THERAPEUTIC USE

### Morning Session

**Chairs:** Prof. Juan Bueren. Division of Hematopoiesis and Gene Therapy. CIEMAT.

Prof. Francisco Martín Molina. GENYO. Head Gene and Cell Therapy Group.

### Session I: Gene Editing and Viral and non Viral Vectors:

**09:00-09:30 h. Gene editing for gene therapy applications.**

Prof. Francisco Martín Molina. GENYO. Head Gene and Cell Therapy Group. Dto de Bioquímica y Biología Molecular 3 e Inmunología. Faculty of Medicine. University of Granada. Spain.

**09:30-10:00 h. Adeno Associated Virus (AAVs).**

Prof. Hildegard Büning. Professor of Infection Biology and Gene Transfer. Director Institute of Experimental Hematology. Hannover Medical School. Hannover. Germany.

**10:00-10:30 h. Non viral vectors: Transposons.**

Prof. Zoltán Ivics. Head of Division. Medical Biotechnology. Paul Erlich Institute. Langen. Germany.

**10:30-11:00 h. Coffee break.**

### Session II: Towards the gene therapy of monogenic diseases:

**11:00-11:20 h. Metabolic diseases.**

Prof. Cristian Samedou Picazo. Gene Therapy Program at CIMA. Coordinator of Advanced Therapies at IdiSNA. University of Navarra. Pamplona. Spain.

**11:20-11:40 h. Neurological disorders.**

Prof. Miguel Chillón. ICREA Research Professor. Head of Gene Therapy in Neurodegenerative Diseases Laboratory. VHIR-UAB. Barcelona. Spain.

**11:40-12:00 h. Skin Disorders.**

Prof. Fernando Larcher. Head of Division of Epitelial Biomedicine. CIEMAT. Madrid. Spain.

**12:00-12:20 h. Hematopoietic gene therapy.**

Prof. Juan Bueren. Head of the Division of Hematopoiesis and Gene Therapy Division CIEMAT. University of Madrid. Spain.

**12:20- 13:00 h.** Discussion.

**13:00- 15:00 h.** Lunch.

### Afternoon Session

Cancer Virotherapy and gene therapy

**15:00-15:20 h. Oncolytic Virotherapy. New tools against cancer.**

Prof. Ramón Alemany. Head Cancer Immunotherapy Division. Institut Català d'Oncologia – IDIBELL. Barcelona. Spain.

**15:20-15:40 h. Oncolytic Virotherapy. Ongoing clinical trials.**

Prof. Manuel Ramírez. Director of the Unit for Cell & Gene Therapies. University Hospital Niño Jesús Madrid. Spain.

**15:40-16:00 h.** Discussion.

**16:00-16:30. Key question Conference: “My personal road to research and innovation”**

Prof. Pablo Artal. Professor of Optical Science. Spain Research Award. University of Murcia. Spain.

## ANTITUMOR IMMUNOTHERAPY. CHIMERIC ANTIGEN RECEPTOR (CAR) CELLS

### Morning Session

**Chair:** Prof. Manel Juan. Professor of Immunology. University of Barcelona. Spain.

**09:00-9:30 h. The immune system. Innate and adaptative response. Tolerance and immunoregulation. Immune evasion.**

**Prof. Pedro Berraondo.** Director Research Group on Cytokine-based Therapies. Immunology and Immunotherapy Program. CIMA. University of Navarra. Pamplona. Spain.

**9:30-10:00h. Next-Generation Adoptive T Cell Therapies: When "CARs" became soluble.**

**Prof. Luis Álvarez-Vallina.** Head Cancer Immunotherapy Units (UNICA). University Hospital 12 Octubre. Spain Professor of Bioengineering. Aarhus University. Denmark.

**10:00-10:30 h. CAR T- cells. Biological principles and academic manufacture.**

**Prof. Manel Juan.** Head Immunology Dpt. Hospital Clinic. Professor of Immunology. University of Barcelona, Spain.

**10:30-11:00 h. Coffee break.**

**11:00-11:15 h. CAR T- cells for the treatment of Leukemia.**

**Prof. Julio Delgado.** Head of Oncoimmunology Unit, Hospital Clínic, IDIBAPS, University of Barcelona, Spain.

**11:15-11:30 h. CAR T- cells for the treatment of non Hodgkin Lymphoma.**

**Prf. Francesc Bosch.** MD PhD. Head, Department of Hematology. Director, Experimental Hematology, VHIO. Professor, Universitat Autònoma Barcelona. University Hospital Vall d'Hebron. Spain.

**11:30-11:45 h. CAR T- cells for the treatment of Hodgkin Lymphoma.**

**Prof Javier Briones.** Head Clinical Hematology Hospital Santa Creu i Sant Pau. Professor of Medicine Autonomous University Barcelona, Spain

**11:45-12:00 h. CAR T- cells for the treatment of Multiple Myeloma.**

**Prof. Joaquín Martínez López.** Professor of Medicine. Head Hematology Dpt. University Hospital 12 Octubre. (i+12). Complutense University. Madrid. Spain.

**12:00-12:15 h. Mechanisms of toxicity and resistance to CAR T- cells. How to overcome it.**

**Prof. Felipe Prósper.** Professor of Medicine. Head Hematology Dpt. CUN. University of Navarra. Pamplona. Spain.

**12:15-12:30 h. CAR NK-cells. Scientific background and clinical applications.**

**Prof. Cristina Eguizabal Argai.** Cell Therapy, Stem Cells and Tissues Group. Basque Center for Blood Transfusion and Human Tissues (CVTTH). IIS Biocruces Bizkaia. Galdakao. Spain.

**12:30-12:45 h. CAR T-cells for the future. The Genicar Project.**

**Prof. Alejandro Madrigal.** Professor of Haematology, UCL Cancer Institute. Honorary Consultant, Royal Free NHS Trust. UCL. London, UK.

**12:45-13:30 h. Discussion.**

**13:30-15:30 h. Lunch.**

### Afternoon Session

**15:30-16:30 h. Special session: CAR T- cells in Spain, were we do stand?**

**Chair:** Prof. Manel Juan. Professor of Immunology. University of Barcelona. Spain.

**15:30-15:45 h. The Spanish academic CAR T- cells model.**

**Prof. Alvaro Urbano Izpisua.** Professor of Medicine. University of Barcelona. Hospital Clínic. Institut Josep Carreras. Barcelona, Spain.

**15:45-16:00 h. The Spanish Advanced Therapy Program. A model in evolution.**

**Prof. María Dolores Fraga Fuentes.** General Sub-Director of Basic Portfolio of National Health Services and Pharmacy. Ministry of Health, Consumption and Social Welfare. Madrid. Spain.

**16:00-16:15 h. The view of the ONT about Advanced Therapies in Spain.**

**Prof. Dolores Hernández Maraver.** TPH y SCU Program National Transplant Organization. Madrid. Spain.

**16:15-16:30 h. Discussion.**

**16:30-17:00 h. Key question Conference: "Science communication: a powerful tool"**

**Prof. José Manuel López Nicolás.** Vice-Rector of transference and communication. University of Murcia. Spain.



## SOMATIC CELL THERAPY AND TISSUE ENGINEERING

### Morning Session

**Chairs:** Prof. Fermín Sánchez -Guijo. Professor of Medicine. University of Salamanca. Spain  
Prof. Damián García-Olmo. Professor of Surgery. Autonomous University of Madrid. Spain.

**09:00-9:20 h. MSC: the biological basis to become a cell medicine.**

**Prof. Agustín Zapata.** Professor of Cell Biology. Complutense University of Madrid. Spain.

**09:20-9:40 h. MSC sources and procurement. The umbilical cord MSCs and its therapeutical use.**

**Prof. Sergi Querol.** Director. Banc de Sang I Teixits. Barcelona. Spain.

**09:40-10:00 h. MSC trafficking. GPS to optimize MSC therapeutics.**

**Prof. Robert Sackstein.** MD, PhD  
Senior Vice-President for Global Medical Affairs, Florida International University, Miami, FL  
Professor Emeritus, Harvard Medical School, Boston, MA.

**10:00-10:30h. Discussion.**

**10:30-11:00 h. Coffee break.**

**11:00-11:15 h. MSC therapy for the treatment of Graft versus host disease.**

**Prof. Fermín Sánchez-Guijo.** Professor of Hematology, University of Salamanca. Head, Cell Therapy Area, IBSAL-University Hospital of Salamanca. Vice-President Elect, ISCT. Spain.

**11:15-11:30 h. MSC therapy for the treatment of arthritis. The ArtroCell trial.**

**Prof. José Lamo de Espinosa.** Professor of Orthopedics, University of Navarra. Spain.

**11:30-11:45 h. MSC therapy for the treatment of Osteoporosis.**

**Prof. José M. Moraleda.** Professor of Medicine. University of Murcia. Head, Dpt of Hematology and HSCT Program. Institute of Biomedical Research of Murcia - IMIB, Virgen de la Arrixaca University Hospital. Murcia, Spain.

**11:45-12:00 h. MSC therapy for the treatment of critical limb ischemia. The NOMA trial.**

**Prof. Mariano García Arranz.** Senior Research. Fundación Jimenez Diaz. Autonomous University of Madrid. Madrid, Spain.

**12:00-12:15 h. MSC therapy for the treatment of ALS.**

**Prof. Salvador Martínez Pérez.** Professor of Human Anatomy and Embryology. University Miguel Hernandez-CSIC. Elche. Spain.

**12:15-12:30 h. Modified MSC to improve anti-inflammatory function.**

**Prof. Rosa M. Yañez González.** Hematopoietic Innovative Therapies Division. CIEMAT. University of Madrid. Madrid, Spain.

**12:30-13:00 h. Discussion.**

**13:00-15:00 h. Lunch.**

### Afternoon Session

**Chairs:** Prof. Fermín Sanchez-Guijo. Professor of Medicine. University of Salamanca. Spain.

**Prof. Damián García Olmo.** Professor of Surgery. Autonomous University of Madrid. Spain.

**15:00-15:15h. Cell therapy and bioengineering for skin diseases.**

**Prof. Alvaro Meana.** University of Oviedo. Oviedo. Spain.

**15:15-15:30 h. Cell Therapy to improve Healing in Surgery. The road map to success.**

**Prof. Damián García Olmo.** Professor of Surgery. Chief of Department of Surgery. Fundación Jimenez Diaz University Hospital. Autonomous University of Madrid. Madrid, Spain.

**15:30-16:00h. Discussion.**

**16:00-16:30 h. Key question Conference: "Vulnerables".**

**Prof. Francisco Jarauta.** Professor of Philosophy. University of Murcia, Spain.

## ADVANCED THERAPIES MANUFACTURE AND INNOVATION: A REAL CHALLENGE

### Morning Session

**Chairs:** Prof. Joan García López. Medical Director. BST. Barcelona. Spain.

**Prof. Nuria Monserrat.** Director Biobancs Platform. Barcelona. Spain.

**09:00-09:20 h. Production of cells in GMP facilities: realities and challenges for the future.**

**Prof. Maria Eugenia Fernandez-Santos.** PhD. Technical Director of the Cell Production Unit. Gregorio Marañón University Hospital. Research Institute Gregorio Marañón. Madrid, Spain.

**09:20-9:40 h. GMP production of lentivirus particles in an academic environment for CART cells and other gene therapy medicinal products.**

**Prof. Josep M. Canals.** Associate Professor, Dpt of Biomedical Sciences; and Director of Creatio-production and validation center of advanced therapies, University of Barcelona. Spain

**09:40-10:00 h. New models to test advanced cell therapies: Organoids.**

**Prof. Nuria Monserrat.** Professor of Research. ICREAs. Bio-engineering Institute of Catalonia (IBEC). Barcelona. Spain.

**10:00-10:30 h. Discussion.**

**10:30-11:00 h. Coffee break.**

**11:00-11:20 h. Innovative therapies based on cell and tissue donation.**

**Prof. Joaquim Vives.** Director de R&D, XCELIA - Banc de Sang i Teixits. Barcelona. Spain.

**11:20-11:40 h. The pericyte as a target for advanced therapies and innovation.**

**Prof. Rut Valdor.** Cell Therapy Unit and HSCT Program. Institute of Biomedical Research of Murcia - IMIB, Virgen de la Arrixaca University Hospital. University of Murcia, Spain.

**11:40-12:00 h. Regulatory issues in advanced Therapies.**

**Prof. Pablo de Felipe.** Unit of Biotechnology and Advanced Therapies at EMA. AEMPS. Madrid, Spain.

**12:00-12:20h. Discussion.**

**12:20-13:30 h. Debate session: The unsolved problems of academic advanced cell manufacture. How to improve the accessibility and affordability of the ATMPs.**

**Chairs:** Prof. Joan García López. Medical Director. BST. Barcelona. **Prof. Agustín Zapata.** Professor of Cell Biology. Complutense University of Madrid.

**Discussants:**

**Prof. Pablo de Felipe.** Unit of Biotechnology and Advanced Therapies at EMA. Madrid, Spain.

**Prof. Cristina Avendaño Sola.** Advanced Therapies coordinator. University Hospital Puerta de Hierro. Madrid. Spain.

**Prof. Maria Eugenia Fernandez-Santos.** Technical Director of the CPU. Gregorio Marañón University Hospital. Madrid, Spain.

**Prof. Enrique Andreu.** Technical director of the CPU. University of Navarra. Pamplona. Spain.

**Prof. Rosario Sanchez Pernaute.** Radytta. Andalusian Advanced therapies coordinator. Sevilla, Spain.

**Prof Natacha Bolaños Martínez.** Patient association. Lymphoma coalition. Spain.

**13:30-15:30 h. Lunch.**

### Afternoon Session

**15:30-16:30 h. Special Talks : Science and other matters of life.**

**Chair:** Prof. José M. Moraleda. Professor of Medicine. IMIB-Arrixaca. University of Murcia. Spain.

**15:30-16:00 h. Is it possible a new development model for the Mar Menor?**

**Prof. Celia Martínez Mora.** Dto. of Biotechnology, Genomics and Best Vegetable. Molecular Genetic Improvement Team. Institute of Agricultural and Environmental Research and Development IMIDA. Murcia. Spain.

**16:00-16:30 h. Changing deep from mind to cell, or how to violate the laws of identity for the benefit of survival.**

**Prof. Jose Sebastián Carrión.** Professor of Evolutive Biology. University of Murcia. Spain.

**16:30-17:00 h. Closing ceremony and awarding of certificates.**

# ADVANCED THERAPIES SUMMER COURSE 2022



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