**CURRICULUM VITAE ET STUDIORUM**

**Riccardo Calafiore, M.D.**

***as of November, 2022***

**ACTUAL RANK**

* **President, Diabetes Research Foundation, Perugia, IT;**
* **Member of the Laboratory for Endocrine Cell Transplants and biohybrid Organs, University of Perugia, Perugia;**
* **Collaborative Professor of Internal Medicine, Department of Internal Medicine, Morsani College of Medicine, University of South Florida, USA**

**RANK UNTIL October 31st, 2022**

* **Professor and Chairman of Endocrinology and Metabolic Disorders, University of Perugia**
* **Chief, Division of Internal Medicine, Endocrinology and Metabolic Sciences, University of Perugia, Hospitals and Clinics**
* **Director, Hospital Department of Internal Medicine and Medical Specialities**
* **Director, Post-graduate specialization School of Endocrinology and Metabolism, University of Perugia**
* **Director, Diabetes Research Center and Foundation**
* **Director Laboratory for Endocrine Cell Transplants and Biohybrid Organs, University of Perugia**

**PLACE AND DATE OF BIRTH**

- Gubbio, Italy, 11 April 1952

**DEGREES**

- 1979: Degree in Medicine and Surgery (M.D.) with full marks and "maxima cum laude", University of Perugia, School of Medicine.

**LICENSURES**

* 1980: License to practice Medicine and Surgery and registration in the Italian Board of Physicians, province of Perugia

**POST-GRADUATE EDUCATION**

- 1984: Specialization in Internal Medicine, with full marks and "maxima cum laude", Post-graduate Internal Medicine Specialty School, and Board of Internal Medicine, the University of Perugia.

**VISITS, FELLOWSHIPS AND SCIENTIFIC DUTIES AT FOREIGN INSTITUTIONS**

- 1) 1983: Endocrine Research Unit, Mayo Medical School and Mayo Clinic, Rochester, Minnesota, USA, as a Visiting Scientist;

- 2) 1985-1987: Diabetes Research Institute, University of Miami School of Medicine, Miami, Florida, USA, as a Post-Doctoral Research Fellow in Diabetes;

- 3) 1991-1993: Neocrin Corporation, Irvine California, USA, as a Vice-President Research and Medical Affairs, within a joint Research and Development Program between the University of Perugia, Perugia, Italy and Neocrin Corporation, Irvine, CA

- 4) 1992-1993: Department of Surgery, Division of Organ Transplantation, University of California Los Angeles (UCLA), Los Angeles, USA as a Visiting Assistant Professor of Surgery;

- 5) 1992-1994: Department of Surgery, Loma Linda University, Loma Linda, USA as a Visting Professor of Surgery;

- 7) 1995: Diabetes Research Institute, University of Miami School of Medicine, Miami, U.S.A., as a Visiting Professor.

- 8) 2001: Department of Anatomy and Cell Biology, University of South Florida School of Medicine, Tampa, U.S.A., as a Visiting Faculty.

- 9) 2001: Department of Pathology, University of Florida School of Medicine at Gainesville, Gainesville, U.S.A., as a Visiting Professor.

- 10) 2002: Department of Pediatrics, Division of Immunogenetics, University of Pittsburgh School of Medicine, Pittsburgh, U.S.A. as a Visiting Scientist.

- 11) 2006: Department of Pathology, University of South Florida, Tampa, U.S.A. as a Visiting Scientist.

- 12) 2007: Beta-Cell Therapy, University of Bruxelles, Bruxelles, Belgium, as a Visiting Professor

- 13) 2008: University of Illinois at Chicago, as a Visiting Professor

- 14) 2011: Altucell Inc., New York, NY, USA as a Visiting Scientist

- 15) 2013: Institute of Stem Cells, Panama City, Panama as a Visiting Faculty

**RESIDENCIES**

- Resident in Internal Medicine, Department of Medicine, University of Perugia School of Medicine, Perugia, academic years 1980-81, 81-82, 82-83, 83-84.

**ACADEMIC APPOINTMENTS**

***ITALY***

- 1987-89 : Adjunct Professor of Endocrinology, Endocrinology and Metabolism, Post-graduate Specialization School, the University of Perugia, academic years 1987-88, 1988-89;

- 2002-03 : Professor of Endocrinology, Post-graduate School in Endocrinology and Metabolic Diseases, University of Perugia School of Medicine.

From 2003 to date: see below

**U.S.A**.

- 1991-96: Adjunct Associate Professor of Medicine, University of Miami School of Medicine, Miami, FL;

- 1991-92: Visiting Assistant Professor, University of California, Los Angeles (UCLA), Los Angeles, California, CA;

- 1991-94: Visiting Professor, Loma Linda University School of Medicine, Loma Linda, CA;

- 1996 to date: Adjunct Full Professor of Medicine, University of Miami School of Medicine, Miami, FL;

- 2008-09: Adjunct Faculty, Department of Surgery, University of Illinois at Chicago, Chicago, IL;

- 2011-12: Affiliate Professor of Pathology, University of South Florida, Tampa, FL.

- 2012-to date: Affiliate Professor of Internal Medicine, University of South Florida, College of Medicine, Tampa, FL

**OTHER APPOINTMENTS**

- 1991-93: Vice President, Research & Medical Affairs, Neocrin Corporation, Irvine, CA;

- 2001-05: Councillor of the Board, Artificial Insulin Delivery System and Pancreas and Islet Transplantation Study Group, European Association for the Study of Diabetes;

- 2005-10: Member, Scientific Advisory Board Living Cell Technologies Ltd, Sydney, AUS;

- 2006-08: Member, Scientific Advisory Board “Chicago Project”, 2005-2008.

- 2006 to date: Representative member for the University of Perugia, Inter-University Consortium for Organ Transplantation, Rome, Italy;

- 2007-11: Member, Board of the International Pancreas and Islet Transplantation Association,

- 2011 to date: Chief Scientific Officer, Altucell Inc., New York, NY, USA.

- 2013-16: Coordinator, Italian Society of Medical Andrology and Sexual Medicine (SIAMS) for Region Umbria;

- 2013-15: President, Umbria Section, Italian Society of Endocrinology (SIE).

- 2015-2017: Coordinator Regions Umbria and Marche, Italian Society of Endocrinology (SIE)

- 2015 to date: Scientific Director, Lions International Diabetes Research Center, Terni, IT

- 2018-2020: President, Italian Society of Diabetology, Umbria Section

**INTERNATIONAL ACADEMIC DUTIES**

- 2007: Universidad del Pais Basco, Leoia (Spain) : Opponent, PhD dissertation Thesis on “Neurocellular transplant for the cell therapy of Parkinson Disease”

- 2007: Karolinska Institutet and University, Stockholm (Sweden): Opponent, PhD dissertation Thesis on “Cellular transplants for the cell therapy of type 1 diabetes mellitus”

**CURRENT RANK**

* Professor and Chairman of Endocrinology and Metabolic Disorders, University of Perugia
* Chief, Division of Internal Medicine, Endocrinology and Metabolic Sciences, University of Perugia, Hospitals and Clinics
* Director, Hospital Department of Internal Medicine and Medical Specialities
* Director, Post-graduate specialization School of Endocrinology and Metabolism, University of Perugia
* Director Laboratory for Endocrine Cell Transplants and Biohybrid Organs, University of Perugia
* Affiliate Professor of Internal Medicine, University of South Florida, Tampa, USA

**DUTIES FOR PROMOTION OF PREVENTION, RESEARCH AND THERAPY OF DIABETES MELLITUS**

2011: Board Member, Lions International, Association for Lions Diabetes;

2012: Board Member, Diabetes Foundation, Perugia, Italy.

**SCIENTIFIC MEMBERSHIPS**

- Italian Society of Diabetology

- American Diabetes Association

- American Federation for Medical Research

- International Pancreas and Islet Transplantation Association

- Cell Transplantation Society

- Italian Society of Endocrinology

- Italian Society of Medical Andrology and Sexual Medicine

**DOCTORATES TEACHING ACTIVITIES**

Member of Teaching College for Doctorate of Biosciences, Biotechnologies and Biomaterials in Vascular and Endocrine and Metabolic Disorders, Italian Ministry of Education from academic year 2009-10 through 2015.16;

Member of Teaching College for Doctorate in Translational Medicine and Surgery accredited by the Italian Ministry of Education, from academic year 2013-14 up to date.

**NATIONAL AND INTERNATIONAL EDITORIAL DUTIES**

1) Member, Editorial Board, International Diabetes Monitor, 1990-94

2) Member, Editorial Board, Pancreas from 1995-

3) Member, Editorial Board, American Journal of Stem Cells from 2012 to date

4) Member, Editorial Board World Journal of Diabetes 2015-19.

3) Member, Editorial Board, Austin Endocrinology and Diabetes Case Reports from 2016-

4) Member, Section Editor, Journal of Diabetes Research, from 2017 to date

5) Member, Editorial Board, Scientific Journal of Stem Cell Research, from 2017 to date

**INVITED LECTURESHIPS**

1) 1987: Invited Lecture “Microencapsulation for pancreatic islet transplantation” III^ Department of Internal Medicine, University of Nagoya, Nagoya, Japan, October 27th, 1987;

2) 1988: Invited Lecture “Microencapsulated islet grafts for type 1 diabetes mellitus” Institute de Biochimie Clinique, Universitè de Geneve, Geneve, Suisse, November 5th, 1988;

4) 1989: Invited Lecture “Microencapsulated islet transplanta : state of the art” Barbara Davis Center for Childhood Diabetes, University of Colorado Health Sciences Center, Denver, USA, September 27th, 1989;

5) 1989: Invited Lecture : “Actual state of microencapsulated islet grafts for the therapy of type 1 diabetes” Department of Medicine, University of Alberta, Edmonton,Alberta, Canada October 2nd 1989;

6) 1990: Invited Lecture “Immunoisolation for pancreatic islet transplantation in type 1 diabetes” Joslin Diabetes Center, Harvard Medical School, Boston, MA, USA, April 10th, 1990;

7) 1990: Invited Lecture “Microencapsulated islets: application too the therapy of type 1 diabetes” Universidad Complutense, Faculdad de Medicina, Madrid, Espan, September 21st 1990;

8) 1991: Invited Lecture State of the art lecture, International Diabetes Federation Congress, Transplantation of pancreatic islets for the therapy of Type 1 Diabetes Mellitus, 16th June 1991, Washington DC, USA;

9) 1993: Invited Lecture: Actual state of pancreatic islet transplantation for the therapy of type 1 diabetes mellitus” Karolinska Institute, Stockholm, Sweden March4th, 1993;

10) 1995: Invited Lecture “Immunoprotection of pancreatic islet transplants within microcapsules” University of Miami School of Medicine, Miami, FL, USA July 10th, 1995;

11) 1998: Invited Lecture “Polymer qualification for preparation of microcapsules” University of Lausanne, Ecole Polytechnique Federale, Lausanne Switzerland;

12) 2001: Invited Lecture “Microencapsulated islet transplantation”University of South Florida, Tampa, USA January 12th, 2001;

13) 2002: Invited Lecture “Therapy of type 1 diabetes by islet transplantation” University of Pittsburgh, School of Medicine, Pittsburgh, June 23rd, 2002, USA:

14) 2003: State of the art lecture “Bioartificial Pancreas” XX Congress of the Artificial Insulin Delivery Pancreas and Islet Study Group, European Association for the Study of Diabetes, Igls, Austria.

15) 2004: Invited lecture “Transplantation of microencapsulated islets for the therapy of type 1 diabetes” 5th Levine Symposium on Diabetes Mellitus, Los Angeles, USA

16) 2005: State of the Art lecture : “Transplantation of microencapsulated islets” XXII Congress of the Artificial Insulin Delivery Pancreas and Islet Study Group, European Association for the Study of Diabetes, Igls, Austria.

17) 2005: Invited lecture “From experimental to clinical application of microencapsulated islets for the therapy of type 1 diabetes” IV Assisi International Sympoium on New Technologies for Insulin Replacement – Artificial Pancreas and IT – Islet Transplantation”, Assisi, Italy.

18) 2005: Invited lecture “Transplantation of microencapsulated islets without immunosuppression” 10th World Congress of the International Pancreas and Islet Transplant Association”, Geneva, Switzerland.

19) 2006: Invited lecture “Transplantation of microencapsulated islet” XVIII Congreso della Sociedad Espanola de Diabetes”, Madrid, Spagna 23-26/4/2006.

20) 2006: Invited lecture “Microencapsulated islet allografts in nonimmunosuppressed patients with type 1 diabetes” 8th International Congress of the Cell Transplant Society, May 18.20, 2006.

21) 2006: Invited lecture “Transplantation of microencapsulated islets for the therapy of type 1 Diabetes Mellitus”, University of South Florida, College of Medicine, Tampa, USA, May 22, 2006.

22) 2006: Invited lecture “Microencapsulated islet grafts for the therapy of type 1 diabetes mellitus”, Vrije Universiteit, Brussels, Belgium.

23) 2007: Invited lecture “Microencapsulated human islet grafts in humans”, International Congress of the Bioencapsulation Research Group, Vienna, A, 6-8/9/2007

24) 2008: Invited lecture: “Methods for microencapsulation : pre-clinical and clinical studies”, Auckland, New Zealand.

25) 2009: Invited lecture: “Islet microencapsulation: from bench to bedside” XXVI Congress of the Artificial Insulin Delivery Pancreas and Islet Study Group, European Association for the Study of Diabetes, Igls, Austria.

26) 2011: Invited Lecture: “Update in islet microencapsulation, bench and bedside”, Juvenile Diabetes Research Foundation Workshop, New York City, NY, USA, March 14, 2011

27) 2011: Invited Lecture “Sertoli cells for the cell therapy of type 1 diabetes mellitus” World Congress of the International Pancreas and Islet Transplantation Association, Prague, CZ, June 1-4, 2011

28) 2011: Invited lecture “Role of Sertoli cells in the cell therapy for type 1 diabetes mellitus” University of South Florida, Tampa, USA July 8, 2011.

29) 2013: Invited Lecture "Alginate-based microcapsules for pancreatic Beta-cell substitution therapy in type 1 diabetes mellitus: from bench to bedside" American Association Pharm Scientists, Italian University Network, International Congress, Perugia, 8.3.2013

30) 2013: Invited lecture "Microencapsulated endocrine cell grafts for the cell and molecular therapy of diabetes and other autoimmune and chronic disorders" International Conference, Panama City, Panama 15.5.2013.

31) 2014: Invited lecture "Cell transplants for the cell and molecular therapy of diabetes mellitus and other chronic/inflammatory and autoimmune disorders", University of South Florida, Department of Internal Medicine, Tampa, USA, 30.01.2014

32) 2015: Invited international webinar of the International Pancreatic and Islet Transplantation Association “Micro- and macro-encapsulation: what’s new?” 17 Aprile 2015

33) 2016: Invited Lecture "Cell and Molecular Therapy for Type 1 diabetes mellitus: progress and challenges", University of Vienna, Vienna 28/1/2016.

34) 2016: Invited International Webinar by the Juvenile Diabetes Research Foundation, New York USA, “Microencapsulation for the Cell Therapy of type 1 diabetes mellitus” 14 Marzo 2016.

35) 2016: Invited lecture "Microencapsulated cell grafts for the cell and molecular therapy of diabetes mellitus and other autoimmune/inflammatory and chronic disorders” Wake Forest University School of Medicine, Winston Salem USA, 18.11.2016.

36) 2018: Invited lecture "Polymeric coating of induced pluripotent stem cells" Horizon 2020 European Community, Brussels, N

37) 2019: Invited lecture "Final report on Polymeric coating of induced-pluripotent stem cells" Horizon 2020 European Community, Rhodes, GR.

**NATIONAL AND INTERNATIONAL SCIENTIFIC COLLABORATIONS**

1) University of South Florida, Tampa, USA (Prof. B. Hansen; Prof. D.F. Cameron) : Xenotransplantation of microencapsulated porcine pancreatic islets and Sertoli cells for the treatment of diabetes mellitus.

2) Edison Biotechnology Institute, University of Ohio (Prof. J. Kopchick) : Therapy of Laron Syndrome by xenograft of microencapsulated porcine Sertoli cells.

3) MandalMed, Department of Neurosurgery, University of Calaifornia at San Francisco, San Francisco, USA (Dr. C. John) : Isolationa and culture maintenance of human Sertoli cells.

4) Center for Biotechnology and Genomic Medicine, University of Georgia, Medical College, Augusta, GA, USA (Prof. J. She) : Prevention and therapy of experimental Intestinal Bowel Disease by xenograft of microencapsulated porcine Sertoli cells.

5) Istituto Neurologico Mediterraneo (NEUROMED), University of Molise, Venafro, Italy: Prevention and therapy of murine autoimmune encephalomyelitis by graft of microencapsulated porcine Sertoli cells.

6) Department of Immunology, Weizmann Institute of Science, Rehovot, IL (Prof. Y. Reisner) : a) Transplantation of bone marrow “mega-dose” in leukemic mice conditioned with encapsulated Sertoli cells pre-transplant; b) graft of porcine embryonic pancreas (E42) in the sub-capsular renal region of mice pre-treated with intraperitoneal microencapsulated porcine Sertoli cells.

7) University of Padova, Padova, IT: European Center for cryopreservation of male gametes: therapy of male infertility

8) Wake Forest University, Winston Salem USA: transplantation of microencapsulated Sertoli cells and adult mesenchymal stem cells for the therapy of diabetes mellitus.

**HONORS AND AWARDS**

1) Telethon Grant #E067 (1994-1995): EU 72300;

2) Juvenile Diabetes Foundation International Grant #196011 (1996-98) : EU 103300;

3) Telethon Grant # EC.562 (1997-2001): EU 124000;

4) Diatranz LTD, Auckland, New Zealand: 1999-2002: EUR 53700;

5) Grant MURST (National Relevant Scientific Projects, 2000-02): EUR 72.300);

6) National Stem Cells Program, Istituto Superiore di Sanità (2003-2005): EUR 181.000;

7) Grant MIUR (National Relevant Scientific Projects, 2004-2006) EUR 120000;

8) Living Cell Technologies Ltd (2005-2009) EUR 50.000 per annuum;

9) Beta-Cell Therapy, European 6th Framework, Brussels, B: (2007-2010): EUR 90.000;

10) Grant from Cassa di Risparmio di Perugia Foundation for “XENOGRAFT OF MICROENCAPSULATED SERTOLI CELLS FRO THE CURE OF TYPE 1 DIABETES MELLITUS” 2008: EUR 100000;

11) Progetto “TRAPIANTI CELLULARI PER LA TERAPIA DEL DIABETE MELLITO TIPO I (INSULINO DIPENDENTE)”. Regione Lazio. Approvato il 31/03/08: 100.000 Euro.

12) Grant from Altucell Inc.New York, NY “TRANSPLANT OF MICROENCAPSULATED PORCINE SERTOLI CELLS FRO THE CURE OF TYPE 1 DIABETES AND OTHER AUTOIMMUNE DISORDERS” EUR 200.000 for 2010-11 + EUR 200.000 for 2011-12; + EUR 200.000 for 2013-2016.

13) Grant Horizon 2020, Elaislet Project, from EU for 2015-2018.

14) Grant from CARIT Foundation, Terni IT, EUR 70.000 for 2015-2016

15) Grant from CARISP, Perugia, IT EUR 8000, 2017.

16) Grant Horizon 2020 EC "Elaislet: tailored eleastin-like recombinamers as advanced systems for cell therapy in diabetes mellitus: a synthetic biologic approach towards a bioeffective and immunoisolated biosimilar islet cell niche".

17) Grant from the Bank Foundation CARIT for application of 3D bioprinted scaffolds for cell transplantation in type 1 diabetes mellitus.

**PATENTS (2008-2020)**

1) US PATENT: US2010/0298262A1 "Process for the ultra-purification of alginates", Nov 25, 2010;

2) US PATENT: US 2011/0250280 A1 "Microencapsulation process of Sertoli cells, microcapsules obtained and their use for prevention and cure of Type 1 Diabetes Mellitus, June 17, 2011;

3) US PATENT: US 2008/0070301A1 "Methods for preparing xeno-transplantable porcine islets", March 20, 2008

4) US PATENT: US 2015/0290141 A1 "Clinical grade sodium alginate for microencapsulation of myofibroblasts isolated from Wharton Jelly for prevention and treatment of autoimmune and inflammatory diseases" October 15, 2015.

5) US PATENT 2018 - 62/768.249 "Alginate microcapsules for cell and molecular therapy that secrete bioactive immune molecules".

**SUMMARY**

- 1979: M.D. University of Perugia, School of Medicine, Perugia IT

- 1980: License to practice Medicine and Surgery in Italy and EU Countries

- 1979-84: Resident in Medicine, University of Perugia, Perugia, Italy

- 1983: Visiting Scientist, Mayo Medical School and Mayo Clinic, Rochester, USA

- 1984: Specialist in Internal Medicine, University of Perugia, Perugia, Italy

- 1985-87: Research Fellow in Diabetes, D.R.I., University of Miami, Miami, USA

- 1987-1989: Adjunct Professor of Endocrinology, University of Perugia, Perugia, Italy

- 1987-2005: Director, Islet Transplant Laboratory, University of Perugia, Perugia, Italy

- 1988-2003: Assistant Professor of Medicine, and Director Islet Transplant Laboratory, University of Perugia, Perugia, Italy

- 1991-96: Adjunct Associate Professor of Medicine, Univ. of Miami, Miami, USA

- 1991-93: Vice President Research& Medical Affairs, Neocrin Corp., Irvine, USA

- 1992-93: Visiting Assistant Professor, UCLA Medical Center, Los Angeles, USA

- 1992-94: Visiting Professor, University of Loma Linda, Loma Linda, USA

- 1993-2003: Assistant Professor of Medicine, University of Perugia, Perugia, Italy

- 1993-2001 Adjunct Professor, Post-graduate course in Endocrinology and

Metabolism, University of Perugia, Perugia, Italy

- 1995: Visiting Professor, Diabetes Research Institute, University of Miami

School of Medicine, Miami, USA

- 1996 to indefinitely: Adjunct Professor of Medicine, University of Miami, Miami, FL, USA

- 2001: Visiting Professor, University of South Florida, Tampa, USA;

- 2002: Visiting Professor, University of Pittsburgh, Pittsburgh, USA;

- 2003 to date: Professor of Endocrinology, University of Perugia, Perugia, Italy;

- 2005: Director Islet Transplant Program, University of Perugia and Rome, Italy.

- 2006: National Member, Inter-University Consortium for Organ Transplant

- 2006: Visiting Professor, University of South Florida, Tampa, USA

- 2007: Board, International Pancreas and Islet Transplant Association

- 2007: Visiting Professor, Vrjie Universiteit, Brussels, BE

- 2008: Adjunct Professor, University of Illinois at Chicago, Chicago, USA

- 2009: Professor and Chairman of Endocrinology and Director Reproductive Endocrinology and Diabetes, University of Perugia at Terni Hospitals and Clinics, Terni

- 2011: Chief Scientific Officer, Altucell Inc., New York, NY, USA.

- 2011: Affiliate Professor of Pathology, University of South Florida, Tampa, USA.

- 2012-18: Director, Post-Graduate Specialization in Nutrition and Metabolic Sciences, University of Perugia, Perugia, Italy.

- 2012 to date: Affiliate Professor of Internal Medicine, Morsani College of Medicine, University of South Florida, Tampa, USA.

- 2013 to date: Coordinator, Umbria Region, Italian Society of Medical Andrology and Sexual Disorders

- 2013-15: President, Umbria Section of the Italian Society of Endocrinology

- 2015-2017: Coordinator, Regions Umbria and Marche, Italian Society of Endocrinology

- 2015 to date: Scientific Director, Lions International Diabetes Research Center, Perugia, IT

- 2020 to date: Professor and Chairman of Endocrinology and Chief, Division of Internal Medicine, Endocrinology and Metabolism, University of Perugia, Hospitals and Clinics, Perugia IT

- 2022 : Director Diabetes Research Center and Foundation, Perugia, IT

**SCIENTIFIC PUBLICATIONS AND INTERESTS IN RESEARCH**

Prof. Calafiore is the author of over 200 full papers (plus over 120 communications), 160 of which are PubMed indexed, mainly focused on microencapsulation technologies, pancreatic islet transplantation, within microcapsules, for the potential cure of insulin-dependent diabetes mellitus, stem cells for prevention and treatment of autoimmune disorders (including type 1 diabetes), skin grafts with scaffold containing stem cells for skin regeneration (ie, for treatment of profound diabetic foot ulcers- pre-clinical trials completed at this time), most of which reported in international peer-reviewed Journals.

In greater details, Prof. Calafiore is one of the world leaders in the scientific and academic community engaged in islet as well as other insulin producing cells, as well as other endocrine cell types transplantation, engaged in the final cure of type 1 diabetes mellitus. In particular, he has developed pioneering work on artificial membranes (microcapsules) for immune-protection of the cell grafts with no general, pharmacologic recipient’s immunosuppression. This biopolymeric microcapsules were employed in world pioneering pilot clinical trials for transplantation of donor human islets into non immunosuppressed patients with type 1 diabetes mellitus (2004-2010). In more recent years he has created an Interdisciplinary Laboratory for Endocrine Cell transplant and Bioartificial Organs that actually is engaged in the following frontier research studies : 1) Induction of acquired recipient’s immune-tolerization, by graft of neonatal porcine Sertoli cells within microcapsules, in several experimental animal models of autoimmune/inflammatory-based disorders : a) type 1 diabetes mellitus (NOD mice, diabetic sub-human primates at the University of South Florida, Tampa, in collaboration with Prof. Barbara Hansen); b) autoimmune colitis; c) autoimmune encephalomyelitis; muscular dystrophy; d) Laron syndrome; e) type 2 diabetes mellitus; f) hematologic proliferative disorders (leukemia). 2) use of adult mesenchymal stem cells originally isolated from the post-partum, umbilical cord Wharton Jelly, as an immunomodulatory and substitutive cell model for tissue engineering in type 1 diabetes and other applications, such as skin regeneration for the treatment of profound diabetic foot ulcers (pre-clinical trials in rodents successfully completed). 3) Development of a new generation of immunomodulatory minimal size, alginate-based microcapsules for immune-isolation of several cell grafts and macroscopic scaffold for tissue regeneration. 4) Development of induced-pluripotent human stem cells (iPSC) derived from human blood cells for generation of insulin producing cells, to be enveloped in micro-membranes for in vitro and in vivo insulin production. 5) Co-development of a new approach for graft of microencapsulated human islets into a unique graft site (ie, the omentum) in non-immunosuppressed patients with type 1 diabetes mellitus (first patient grafted in March 2021) in collaboration with Niguarda Hospital, Milano IT.