Education & Training

1985: Visiting scientist at the Department of Physiology and Biophysics, Harvard Medical School (HMS), Boston, MA, USA.

1982-1985: Fogarty Fellow, Section on Biochemistry of Cell Regulation, Laboratory of Biochemical Pharmacology, National Institutes of Arthritis, Diabetes, Digestive and Kidney Diseases (NIADDK), National Institutes of Health (NIH), Bethesda, MD, USA.

1984: Specialty in Endocrinology, summa cum laude, University of Rome Medical School.

1980: M.D., summa cum laude, University of Catania Medical School.

Research Experience

2010-present: Director, Interdepartmental Center for Stem Cells and Regenerative Medicine, University of Modena and Reggio Emilia, Modena, Italy
2008-present: Scientific Director, Holostem Terapie Avanzate S.r.l., Modena, Italy
2008-present: Director, Center for Regenerative Medicine “Stefano Ferrari”, University of Modena and Reggio Emilia, Modena, Italy.
2004-present: Full Professor of Biochemistry, University of Modena and Reggio Emilia, Modena, Italy.
2002-2007: Scientific Director of the Veneto Eye Bank Foundation, Venice, Italy.
1996-2002: Head, Laboratory of Tissue Engineering, I.D.I., Istituto Dermopatico dell´Immacolata, Roma, Italy.
1992-1995: Deputy Head, Laboratory of Cell Differentiation, National Institute for Cancer Research, Genova, Italy.
1986-1992: Senior Investigator, Laboratory of Cell Differentiation, National Institute for Cancer Research, Genova, Italy.

Skills

Michele De Luca has dedicated most of his scientific activities to translational medicine. He is recognised as a leading scientist in squamous epithelial stem cell biology and has been a driving force in the development of epithelial stem cell-mediated cell therapy and gene therapy. Following on early work on the use of human epidermal stem cell cultures in life-saving treatment of massive full-thickness burns and in repigmentation of stable vitiligo and piebaldism by keratinocyte/melanocyte co-colture, he was first to establish human urethral stem cell culture aimed at urethral regeneration in posterior hypospadias (N. Engl. J. Med. 1990). He then developed human limbal stem cell culture (J. Cell Biol. 1999) for corneal regeneration in patients with severe limbal stem cell deficiency (Lancet 1997; NEJM 2010). This treatment leads to recovery of normal vision and is now used worldwide. De Luca is also pioneering ex-vivo epithelial stem cell-mediated gene therapy for genetic skin diseases. He coordinates the first successful clinical trial to treat junctional epidermolysis bullosa (Nat. Med. 2006). De Luca has characterised molecular mechanisms regulating long term proliferative potential, clonal evolution and self-renewal of epithelial stem cells. In particular, he shed light on the role of p63 (different isoforms) and c/EBPδ in regulating the proliferative potential and the self-renewal of human corneal stem cells, respectively (PNAS 2001, 2005; J. Cell Biol. 2007). Notably, his work demonstrated that the clinical success of limbal stem cultures is dependent on a discrete number of stem cells identified as holoclones expressing the ΔNα isoform of p63 (N. Engl. J. Med. 2010, TMM 2011).

Michele De Luca is internationally recognised for his experience in stem cell therapy. He contributed to two reports by the International Society for Stem Cell Research, dealing with new guidelines for responsible translational stem cells research (Cell Stem Cell 2008, 2009).