

# Molecular Mechanisms in Tissue Degeneration and Regeneration

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## LECTURE

Epithelial Stem Cells and Regenerative Medicine.

### Dr. MICHELE DE LUCA

He is Full Professor of Biochemistry, Director of Centre for Regenerative Medicine "Stefano Ferrari", Director of Interdepartmental Centre for Stem Cells and Regenerative Medicine, University of Modena and Reggio Emilia, Modena, Italy and Scientific Director of Holostem Terapie Avanzate S.r.l., Modena, Italy. He was born in Savona, Italy, May, 17, 1956.

Prof. De Luca was Scientific Director of the Veneto Eye Bank Foundation (2002-2007), Director of the Laboratory of Tissue Engineering at the Istituto Dermopatico dell'Immacolata, Rome (1996-2002), Deputy Head, Laboratory of Cell Differentiation, Istituto Nazionale per la Ricerca sul Cancro, Genova (1992-1995), Group Leader in the same Institute (1986-1992), Visiting Scientist at the Department of Cell Biology, Harvard Medical School, Boston (1985), Fogarty Fellow at the National Institutes of Arthritis, Diabetes, Digestive and Kidney Diseases (NIADDK), National Institutes of Health (NIH), Bethesda (1982-1985).

He graduated M.D. in 1980 and obtained a Specialty in Endocrinology in 1984.

He is founding member of International Ocular Surface Society, member of numerous scientific societies and member of national and international committees. He is author of more than 120 scientific publications in major international journals and author of 6 international patents. He was invited lecturer in more than 150 international meetings and symposia.

Regarding to his scientific activity, Michele De Luca is internationally recognized as a leading scientist in stratified epithelial stem cell biology aimed at clinical application in regenerative medicine. He played a pivotal role in epithelial stem cell-mediated cell therapy and gene therapy. Beside his pioneering 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, he, and his principal collaborator Graziella Pellegrini, were first in establishing human urethral epithelia stem cell cultures aimed at urethra regeneration in posterior hypospadias and human limbal stem cell culture aimed at corneal regeneration in patients with severe limbal stem cell deficiency. This latter treatment leads to recovery of vision in patients with poor alternative therapy. Michele De Luca is currently coordinating the first (successful) ex-vivo epithelial stem cell-mediated gene therapy clinical trial for the gene therapy of genetic skin diseases as Junctional Epidermolysis Bullosa. He is also studying molecular mechanisms regulating long term proliferative potential, clonal evolution and mitotic quiescence of epithelial stem cells.