



LECTURE

Delineating Disease Mechanisms and Discovery of Drug Targets to Restore Function in Heart Failure.

Dr. MARK MERCOLA

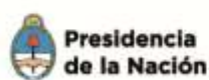
He is Professor of Bioengineering at the Jacobs School of Engineering at the University of California, San Diego. He is jointly appointed as Professor of Development, Aging and Regeneration at the Sanford-Burnham-Prebys Medical Discovery Institute in La Jolla, California. Prior to moving to California in 2002, Dr. Mercola completed postdoctoral training at the Dana-Farber Cancer Institute and Harvard Medical School (1991), and was appointed an Assistant (1991) and Associate Professor (1996) of Physiology and later Cell Biology at Harvard Medical School in Boston, Massachusetts.

Prof. Mercola is known for identifying many of the factors that are responsible for inducing and forming the heart, including the discovery that Wnt inhibition is a critical step in cardiogenesis that provided the conceptual basis and reagents for the large-scale production of cardiovascular tissues from pluripotent stem cells. He has collaborated with medicinal chemists, optical engineers and software developers to pioneer the use of patient iPSC-cardiomyocytes for disease modeling, safety pharmacology and drug development. His academic research is focused on developing and using quantitative assays of patient-specific cardiomyocyte function to discover druggable targets for preserving contractile function in heart failure and promoting regeneration following ischemic injury. He established drug screening and assay development at the Conrad Prebys Center for Chemical Genomics, which operated as one of 4 large screening centers of the US National Institutes of Health (NIH) Molecular Libraries screening initiative and continues as one of the largest academic drug screening centers. He co-founded ChemRegen, Inc., a start-up dedicated to developing small molecules for stem cell and cancer applications.

Prof. Mercola received an NIH MERIT award for his work on heart formation, and authored over 120 papers. He holds numerous patents, including describing the invention of the first engineered dominant negative protein and small molecules for stem cell and cancer applications. He serves on multiple editorial and advisory boards, including Vala Sciences (San Diego), Stem Cell Theranostics (Palo Alto) and the Human Biomolecular Research Institute (San Diego). Dr. Mercola is firmly committed to teaching, and directs courses in Cardiovascular Physiology, Biotechnology and Tissue Engineering (lab course), and co-directs senior design, a year-long course required of all Bioengineering undergraduates, in which teams of students spend 1 year working in teams to design and build biocompatible materials and devices. His laboratory is funded by the NIH, California Institute for Regenerative Medicine and the Fondation Leducq.

The Mercola lab website is <http://mercola.eng.ucsd.edu/>.

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