

**Cellular programming and reprogramming  
Methods and protocols**  
**Sheng Ding (Ed)**  
**Humana press, Totowa, NJ (USA)**  
**Series: Springer Protocols**  
**Methods in Molecular Biology, Volume  
636, 2010**  
**Pages: 334; €114.35**  
**ISBN: 978-1-60761-690**

There is a great need in contemporary Biology of pluripotent stem cells: for basic researches; now-a-day is just for basic research (from the tests for the pharmacological action of new molecules to the toxicity tests) and tomorrow hopefully for therapeutic purposes. Starting from this simple consideration the reader will immediately catch the relevance of a book that explain in a detailed manner a number of strategies to get these cells in quantity and possibly in well characterized cell lines. The derivation of embryonic pluripotent cells from lefted embryos is constrained by bioethical considerations that in several countries (e.g., Italy and Germany) are turned in restriction laws for researchers but that in any case is terribly difficult for the burocratic matter behind it in any of the other countries competing in this field, one name for all, the USA even in the President Obama time (see the recent impossibility to accept for state funded research some good cell lines because the informed consent of the couples was not well written!). Thus, the scientific community take on this burden and put a lot of efforts to find out the way to get these cells. Several strategies have been developed and together with historical knowledge well sedimented in

our developmental biology textbooks lead to the present day capacity to change the differentiative cell fate of a terminally differentiated somatic cell. Telling the truth, one strategy is missed in the presentation of the Sheng Ding edited book: the use of egg extracts to evoke the action of key stemness genes during the cell culture of somatic cells, but all of the others (cell fusion, somatic cell nuclear transfer and ectopic expression of transcription factors and oncogenes) are well presented. Thus, the classic somatic nuclear transfer technique is presented by one of the most prestigious leader, Prof. Jose B. Cibelli together with Pablo J. Ross, the cell fusion-induced reprogramming by Hans Scholer and Jeong Tae Do while the retroviral transfection of both the classical four factors (Oct4, Sox2, Klf4 and c-Myc) or several other variants are presented in several chapters. Quite interesting the two chapters dealing with the *in vitro* activation of pancreatic lineage in adult human liver cells (chapter sixteen by Irit Meivar-Levy and Sarah Ferber) and the reprogramming of pancreatic cell to hepatocytes in the rat pancreatic exocrine cell line AR42J (chapter seventeen contributed by Daniel Eberhard and other colleagues of the Center for Regenerative Medicine, dept. of Biology of the Bath University, UK). Nothing more to say to the reader, just I want to recall the conceptual relevance intrinsic to cellular reprogramming for present-day Biology just recalling the fact that a leading journal in the field of stem cell biology, Cloning and Stem Cells, now is Cellular reprogramming.

*CarloAlberto Redi*  
*University of Pavia, Italy*