

**Stem cell migration****Methods and protocols****Marie-Dominique Filippi and Hartmut Geiger (eds), 2011****Methods in molecular biology; vol. 750****Humana Press – Springer Verlag Heidelberg****ISBN: 978-1-61779-144-4****338 pp – 60 figs – 94,95€**

The trafficking of stem cells is something unconsciously clear to any biologists (*e.g.*, developmental biologists) and physicians (*e.g.*, all those taking care of hematopoietic and bone diseases and traumas); nevertheless it is a phenomenon coming out as a hot topic just in these last years. Likely, the difficulties to track stem cells migration *in vivo* and the understanding of the elusive homing signals matching the circulating stem cells properties that makes these cells to stop and to start multiplication and differentiation (if not transdifferentiation and multiplication with a novel habit) made very difficult to highlight the migration phenomenon, including the opportunity to study the causes of the stem cells mobilization. Now, this book comes to satisfy the needs of all those biologists, biotechnologists and physicians interested to follow the stem cell migration in many different scenarios so the scientific community gratefully acknowledge the editorial efforts of Marie-Dominique Filippi and Hartmut Geiger.

The book presents an overview on stem cell (normal and malignant) migration in its part I while part II and III illustrates the necessary

microscopic technologies to track stem cells migration *in vivo* both when experimentally transplanted (part II) or during development (part III) in several animal models (mouse, rat, zebrafish and *Drosophila*). Part IV is entirely devoted to the historically *master* stem cell system, already described by Artur Pappenheim and Adolfo Ferrata, nearly one hundred years ago simply thanks to the May-Grunwald/Giemsa staining: the hematopoietic stem cell system, that was already postulated by these two *giants* to be a potential source of cells for the treatment of several hematological disorders. Part V is dedicated to the nonhematopoietic stem cell migration: in other words to the adult neural stem cell, the mesenchymal and the epithelial stem cell migration. It is just in the last Part VI that we meet the most fascinating of all the stem cell's migrations: that of the primordial germ cells, likely because at the ground of the very first cell's fate *decision*: somatic - germ line, the very first lineage track ! at the root of the modern Biology since the studies that span from August Weissman to Anne McLaren. Part VI is composed by three chapters dealing with the pathways implicated in stem cell migration (SDF-1/CXCR4 axis, Tyrosine kinases receptors and Rho GTPases).

Each of the twenty-one chapters is detailing in a superb and impressive way even the smaller step and tricky work so that those entering the field cannot do even the silly mistake.

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