

Adult stem cells**Biology and methods of analysis****Donald G. Phinney (ed.), 2011****Humana Press – Springer Verlag****Heidelberg, Germany****Stem cell biology and regenerative medicine series****ISBN: 978-1-61779-001-0****290 pp – 36 figs – 149,95€**

I do not like the use of the term adult referred to the somatic stem cells but it is now-a-days impossible to call the cells we are speaking of somatic, it sounds like an incongruous aristocratic attitude, since both laypeople and scientists know very well that we are speaking of those cells able to self renew and to maintain our body efficiently working. Nowadays we find out adult stem cells in every organ we look at and the present day efforts in this area are mainly devoted to work it out new methods to validate the true stemness nature of the cell line we are able to establish. Thus, the three parts that makes up this volume, the first dealing with the basic biology, the second with the characterization of the adult stem cells phenotype and the third with the regulation of the life span of these cells, are all targeted to the critical evaluation of the techniques we use to distinguish adult stem cell-renewal from cell survival. These techniques are mainly focused on the quantification of the replicative life span, the adult stem cell capac-

ity to grow at clonal density, to express pluripotency-related genes and other specific features of the stemness phenotype.

The volume is well written and well illustrated; I think that a short chapter addressing the beginners on the adult stem cells sources with a stressing note on the cord blood banking (collecting, processing, etc.) should have result in a much more extensive overview of the field. However, the beginners will find out of extreme help the very first chapters dealing with the molecular mechanisms regulating and maintaining the self-renewal and the stem cell niche, particularly focusing on the crucial role played by micro RNAs in these processes.

The chapter devoted to the cancer stem cell paradigm is certainly of great interest, since it addresses one of the most challenging topic in present day Biology; it is well illustrated and clearly written: funnily enough, the historical reference to Rudolf Virchow as the first to theorize more than 150 years ago that a tumour is likely to derive from a mutation in an embryonic stem cell is dated in bibliography as 1963 rather than dated back to the original 1863 to help those students that want to buy the reprinted (by J.B. Lippincott publisher, Philadelphia) original Virchow's masterpiece: *Cellular pathology as based on physiological and pathological histology*. Well done!

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