Protein misfolding and cellular stress in disease and ageing
Concepts and protocols
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Humana Press - Springer Verlag, Heidelberg, Germany
Methods in molecular biology, vol 648, 2010
ISBN: 978-1-60761-755-6
Pages: 330; Figures: 54; €114,35

To those readers that already got the *Protein misfolding* and disease volume, this new title can sound as an update or a second edition of the previous volume: well, this is not the case. To those colleagues that would like to enter the fascinating field of protein's misfolding this new volume constitutes an excellent opportunity to be driven on the causes and mechanisms that are actually know to produce the misfolding. For both types of scientists this volume is a must: the subtitle already sounds as a warning since it reads concepts and protocols rather than *methods and protocols*. In other words, there is an entire section (part I, chapters 1-8) devoted to explain the concepts and the approaches we have gathered in these last years on the misfolding. These chapters are presented in the review style so that the relevant bibliographies are all there; in addition, this section is presenting the conceptual paradigma linking protein misfolding to ageing by conceiving the disease itself as premature ageing processes. Thus, the reader can take profit from this first part and become acquiented on the molecular effects brought about by protein misfolding at a cellular level and, generally speaking, on the pathogenetic mechanisms thereafter triggered by soluble prefibrillar aggregates.

The role played by mitochondrial stress in neurodegenerative diseases and the measuring of protein misfolding thanks to –omics techniques complete part I. The lists of the necessary materials and reagents to successfully carry on detailed step-by-step laboratory protocols (not forgetting tricks to avoid pitfalls) are presented in part II (chapters 9-22) of the volume to illustrate some possible manipulations that can modify the consequences of protein's misfolding: noteworthy, the *rescue of misfolded proteins and stabilization by small molecules* i.e., pharmacological chaperons (chapter 22) by Raymond C. Stevens and his colleagues is presenting how to find out stabilizing pharmacological chaperons for soluble and membrane proteins.

Several chapters are devoted, generally speaking, to different aspects of the role played by mitochondria and the alteration of its ultrastructure in toxicity, oxidative stress and ROS production. The concepts and protocols here presented are a good example of what the scientific community refers as molecular medicine: there is no need to change the academic curricula to teach the molecular bases of present day medicine, simply you have to well present on which physiological parameters the future doctor visit will sounds!

Clearly enough, both editors affiliation is the Research unit for molecular medicine of the Aarhus University hospital (Skejby, Aarhus, Denmark).

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