

Preface

'Apoptosis' or 'programmed cell death (PCD)' recently emerged as a new scientific field. With thousands of publications, two journals ('Cell Death and Differentiation' and 'Apoptosis') and a series of international meetings it is now one of the hottest areas in biomedical research; among the ten most cited papers published and cited in 1995, four were about apoptosis/PCD (1).

The concept of 'cell suicide' is interesting not only for specialists working in different areas like oncology, immunology, embryology, developmental biology, pathology, pharmacology, toxicology, and virology, but has been drawing the attention of a broad public: it happens to be an eye-catching item in numerous newspapers and popular science magazines (2) and even was the subject of two documentary films ('Death by Design' and 'Death Wish') that have been broadcasted by many networks. This massive interest is driven both by scientific curiosity and by the awareness that aberrant regulation of apoptosis probably contributes to some of the worlds most frightening diseases; too much apoptosis has been shown (or is likely) to be involved in AIDS, neurodegeneration, osteoporosis, multiple sclerosis, chronic neutropenia, liver failure, heart infarcts, type I diabetes mellitus, ulcerative colitis, Wilson disease and anaplastic anemia. On the other hand, too little apoptosis results in lymphoma, leukemia, solid tumors, and various autoimmune diseases. The prospect that modulation of apoptosis might provide new opportunities for the treatment of these diseases is gradually affecting research funding systems and especially pharmaceutical and biotechnology industries are making impressive investments. In addition, many companies have been formed whose principal scientific and commercial activities are aimed at apoptosis/PCD.

Because of the interdisciplinary character of the field of cell death and because of its explosive growth during the past few years, there is clearly a great need for informal meetings in which the significance of apoptosis for health and disease and its opportunities for pharmaceutical intervention can be discussed with leading experts. Since no such meeting had been held in the Netherlands before, we, ie: a biochemist working in the field of toxicology (J. Fred Nagelkerke), a cell biologist working in the field of oncology (Jan Hein van Dierendonck), and a molecular biologist working in the field of virology and oncology (Mathieu H. M. Noteborn), decided to bring the subject to the attention of the Royal Netherlands Academy of Arts and Sciences. This resulted in a very successful colloquium of 50 Dutch and foreign scientists, held in the residence and under the auspices of the Royal Netherlands

Academy of Arts and Sciences at the 17th century 'Trippenhuys' in Amsterdam, from July 7 till 9, 1997.

The present Proceedings of the Colloquium in this volume contain three parts, respectively representing session I: The morphology, genes and detection of apoptosis; session II: Deregulated control of signal integration: consequences for the nerve system, immunity, and cancer development; and session III: Apoptosis-based therapies and drug development.

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References

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