Tumor Necrosis Factor:  
Molecular and Cellular Biology and Clinical Relevance

4th International Conference on Tumor Necrosis Factor and Related Cytokines,  
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Preface

The 4th International Conference on Tumor Necrosis Factor and Related Cytokines was held from May 2 to 6, 1992, in Veldhoven, The Netherlands. In an amazingly brief time since its cloning in 1984, TNF has acquired a center stage role and has become recognized as perhaps the most important cytokine in health and disease. This is amply demonstrated by the plenary talks of the Conference, the text of which has been compiled in this volume, and also by the many abstracts presented at the Meeting [published in European Cytokine Network, Vol. 3, No. 2, 1992].

As before, the time interval between the previous TNF Conference at Chiba, Japan, and this one at Veldhoven was 18 months, and yet it is amazing how much progress has been achieved during this period. It would be futile and unfair to try to draw attention here to some highlights of the Meeting. The overwhelming impression is that the field of TNF research and related cytokines has now fully matured. In the past, occasional hints or preliminary evidence surfaced for a TNF involvement in one or other (patho) physiological phenomenon, but these and many more indications have now been fully ascertained and documented.

A number of contributions in this volume deal with the two soluble TNF receptors derived from the small TNF receptor (TNF-R55) and the large receptor (TNF-R75). Soluble TNF receptor release is becoming recognized as an important physiological response process and their concentration profoundly affects the pharmacokinetics and bioavailability of TNF present in circulation. The strong conservation of the TNF gene in the animal
The kingdom is already an indication for its important role in various physiological phenomena, ranging from early embryogenesis to parturition, immune responses, antiviral, antibacterial and antiparasitic activities, neuron transmission, and finally programmed cell death. But overproduction is clearly the source of various pathophysiological phenomena and diseases, such as rheumatoid arthritis, ischemia-reperfusion damage, graft-versus-host disease, cerebral malaria, and many more disease states, as described in this volume.

The interest in TNF was originally based, to a large extent, on its potential as an antitumor agent. But it is fair to say that, because of toxicity, the clinical results obtained so far regarding the systemic use of TNF have been disappointing. However, the clinical approaches, described in this volume, involving the use of TNF in combination with IFN and a chemotherapeutic drug in isolated limb perfusion, have achieved a spectacular success rate.

This volume gives an up-to-date overview of the latest progress regarding all aspects of TNF, lymphotxin, and their receptors, ranging from basic chemistry, gene structure, biochemical mechanism of action and cellular responses, to the involvement of TNF and its membrane-bound and soluble receptors in various infectious, autoimmune and malignant cell diseases. We hope that this volume will convey to the reader some of the pleasure and excitement which was evident at the Meeting, where so much excellent science and biomedical progress were witnessed.

W. Fiers
W.A. Buurman