

PREFACE

The idea of the Conference "Biophysics and Biology of Environmentally Important Membrane-Active Compounds" was to emphasize the importance of investigations on the interaction of various pollutants on biological membranes. It was an exceptional conference, to the best of my knowledge the first of that kind to be held in the world. And thus it was in a sense experimental. Judging by the interest it inspired and especially by the group of excellent lecturers who came to give presentations, the experiment was a success.

The importance of studies on membrane-active compounds, as reported in this publication (based on lectures and posters), comes from the fact that the contact of all substances with living organisms begins at the cell membrane. The contact can occur in two different ways:

1. Harmful substances can affect the membrane directly, disturbing its structure. All changes in membrane structure find their reflection in cell functions (which results from the dependence between the physical structure and biological properties of the membrane). Disturbance in membrane structure, or its integrity, results in the disorganization of the cell function and may eventually lead to cell death.
2. Toxic substances may permeate the cell membrane without affecting it and exert their harmful action inside the cell.

In both cases, there exists a contact with the membrane. Thus knowledge of the mechanisms of compound - membrane contacts can be crucial for preventing that poisonous action.

The literature on the structure and function of biological membranes is immense. There is perhaps even more literature on the effects of xenobiotics on living organisms treated as a whole, or on their macroscopic fragments. It is strange how little is known about the interaction of many toxic substances with membranes. Though that issue is well recognized in pharmacology (with respect to drugs) and neurology (although much remains to be done in this field), very little is known about the effects of most pollutants on membranes. Since protection of the environment is a global issue, studies on the interaction mentioned are becoming more and more important problem, both for pure scientific and practical reasons. I hope that both the Conference and Conference Materials will contribute to the development of research in the discussed area and result in fruitful collaborations.

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**BIOPHYSICS AND BIOLOGY OF ENVIRONMENTALLY IMPORTANT
MEMBRANE-ACTIVE COMPOUNDS
May 11 - 13, 2001 Wrocław, Poland**

The Conference was organized by: the Wrocław Section of the Polish Academy of Sciences and its Commission on Molecular Biology and Biotechnology, the Agricultural University in Wrocław and the Department of Physics and Biophysics of the Agricultural University, the Committee of Cytobiology of the Polish Academy of Sciences, the Polish Network for Molecular and Cell Biology UNESCO/PAN, the Polish Academy of Art and Sciences (PAU) under the auspices of the International Union for Pure and Applied Biophysics (IUPAB), the Polish Biophysical Society, the Polish Society of Cell Biology and the Committee of Agrophysics of the Polish Academy of Sciences.

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