

Drug Research and Drug Development in the 21st Century

Science and Ethics

Bayer AG Centenary Symposium

Boppard/Germany, October 5–8, 1988

Editors: H. P. Wolff
A. Fleckenstein
E. Philipp

Springer-Verlag
Berlin Heidelberg New York
London Paris Tokyo Hong Kong

Contents

History and Philosophy of Bayer Pharmaceutical Research	
W.-D. BUSSE	1
Science, Responsibility, and Society	
K. HEILMANN	9
Opening Remarks	
A. FLECKENSTEIN	16
Message of Greeting	
R. SÜSSMUTH	19
 I. Unresolved Problems of Chronic Diseases	
Demographic and Epidemiologic Trends Today	
R. DOLL	23
Discussion	31
Atherosclerosis and Coronary Heart Disease	
G. SCHETTLER and A. J. R. HABENICHT	34
Discussion	40
Rheumatoid Arthritis: A Modell of Chronic Inflammation	
B. C. GILLILAND	43
Discussion	51
Alzheimer's Disease	
S. CORKIN	53
Discussion	61
Obstructive Lung Disease	
H. HERZOG	62
Discussion	87

Biological Approaches to Cancer Therapy

H. F. OETTGEN	90
Discussion	103

Challenges and Obstacles in Clinical Evaluations of Therapy

Problems, Pitfalls, and Opportunities in Long-term Randomized Trials

A. R. FEINSTEIN	105
Discussion	113

The Impact of Clinical Trials on Clinical Practice

C. D. FURBERG	117
Discussion	122

Panel Discussion I: Cost Effectiveness of Drug Development and Health Economics

Economics	123
---------------------	-----

II. Advanced Technologies, Scientific Achievements

Receptors and Messengers

Low Density Lipoproteins and Hypercholesterolemia

G. ASSMANN, H. FUNKE, and G. SCHMITZ	141
Discussion	159

Leukotrienes in Airways and Blood Vessels

P. J. PIPER	162
Discussion	170

Drug Design

Opening Remarks

E. MUTSCHLER	172
------------------------	-----

Thoughts About Gene Regulation and Mammalian Development

J. E. DARNELL, JR.	173
Discussion	182

Protein Crystallography and Drug Design

W. G. J. HOL	183
Discussion	189

Applying Engineering Principles to the Design of Cellular Biology

R. J. FELDMANN	192
Discussion	198

Analytical Pathophysiology and Biochemistry**Opening Remarks**

W. F. CASPARY	200
-------------------------	-----

Neurotransmitters in the Brain

C. G. GOTTFRIES	201
Discussion	211

Mechanisms of Cancer Metastasis

J. J. KILLION and I. J. FIDLER	214
Discussion	221

Panel Discussion II: Objectives of Basic Research and Predictive Value

Preclinical Testing	224
-------------------------------	-----

The Patient as a Subject to Medical Research**Ethics of Drug Research and Drug Development**

H.-M. SASS	239
Discussion	255

The Functions of Ethical Committees

E. DEUTSCH	258
Discussion	267

Reduction of Risk to Patients Through Optimized Planning of Clinical Drug Development

T. R. WEIHRAUCH and E. PHILIPP	269
Discussion	273