



Wolfgang Schumann, born in 1945 near Bamberg, Germany, studied biology at the Johannes-Gutenberg-University of Mainz, gaining his diploma in 1970 and his PhD two years later. Following a postdoc at the Institute of Microbiology of the University of Goettingen, he became Assistant Professor at the Faculty of Biology of the University of Konstanz in 1975. From 1983 to 1986 he led a research group at the Institute of Biochemistry of the Technical University of Darmstadt, before moving to the University of Bayreuth, where he was appointed Full Professor at the Faculty of Biology. Professor Schumann is on the editorial board of two journals and visiting professor at the universities of São Paulo and Belo Horizonte, Brazil, as well as the National University of Ho-Chi-Minh City, Vietnam.

Bacteria are the most ancient and abundant form of life on our planet. They can be found in the deserts, deep in the earth below the ice covering Greenland and the Antarctic. Since bacteria play an important role in causing diseases and in biotechnology, a profound understanding of their fundamental genetics is a prerequisite to using them as a producer of recombinant proteins and other compounds, as well as in devising new strategies to combat pathogenic organisms.

Providing an up-to-date survey of this booming field, the book is the first to focus on the latest advances in bacterial genetics, bacterial genome projects and gene technology and their applications in biological and biomedical research and medicine. The author guides readers to the forefront of research within the different fields of bacterial genetics, based mainly on results received with *Escherichia coli* and *Bacillus subtilis*.

From the contents:

- Structure of the bacterial cell
- Organization of the bacterial chromosome
- The bacterial cell cycle: Replication of the chromosome, partitioning and cell division
- Recombination
- Origin of mutations and repair of DNA lesions
- Principles of gene regulation
- Protein quality control through molecular chaperones, protein folding catalysts and ATP-dependent proteases
- Secretion of proteins
- Stress genes and their regulation
- Exchange of genes: Transformation, conjugation and transduction

The result is a handy overview containing the fundamental knowledge needed to fight countless lethal human diseases.



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