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Book reviews

Cytoskelett in Biologie und Medizin. Wissenschaftliche Zeitschrift der Friedrich-Schiller-Universität, Jena. Naturwissenschaftliche Reihe, 36,2, 1987.

The book contains the papers presented at the Symposium "Cytoskelett in Biologie und Medizin" organized by the "Gesellschaft für Topochemie und Elektronenmikroskopie der DDR" together with the "Zentralinstitut für Mikrobiologie und experimentelle Therapie Jena der Akademie der Wissenschaften der DDR" and the "Institut für Pathologische Anatomie der Friedrich-Schiller-Universität Jena.

Both the structural dynamics and biochemistry of the cytoskeleton are treated in the book. Because structural and functional irregularities of the cytoskeleton are correlated with disturbances at the (sub) cellular level, the cytoskeleton is important in pathology for diagnostics and possibly also for therapy. Although it is becoming clear that the phenotypic differences between normal and cancer cells are a consequence of the activity of oncogenes, the way in which the normal cell phenotype is influenced and changed by the action of the transforming proteins is far from being completely unravelled. However, it is clear that the cancer cell phenotype has an altered cytoskeleton. The significance of the structure and the functions of the cytoskeleton for pathology is stressed in many papers of this book. In fact, the goal of the symposium was to show biologists and physicians that intense cooperation is needed in this field.

The interesting theme of the book is subdivided into four main topics: (1) microtubule structures, (2) microfilaments, (3) intermediate filaments, (4) the cytoskeleton of blood cells. The methods used in most of the contributions are the raising of monoclonal antibodies against the different proteins of the cytoskeleton; gel electrophoresis and peptide mapping; immunoblotting and indirect immunofluorescence; and radioimmuno-assaying. These are indeed the modern techniques of the moment in cytoskeleton research and are very valuable in pathology because a rapid diagnosis may be achieved.

Most papers are printed on grey paper while most of the micrographs are presented in an appendix on white glossy paper. The literature is cited up to 1986. Some of the contributions, especially the cell biology papers, are in English, but most of the contributions, especially those dealing with pathology, are in German. This fact will, no doubt, give the book a limited circulation in the western countries. As there are so many books and journals in this field at present, and since the contributions presented are of mediocre innovative quality, the book will not be of high scientific importance to cell biologists and pathologists of western countries. I am not in a position to judge its importance to scientists in other countries.

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Trifonov, E. N.; Brendel, V.: Gnomic – A Dictionary of Genetic Codes. Weinheim, Deerfield Beach: VCH 1987. 272 pp., several tabs. Hard bound DM 160,00.

"Gnomic – A Dictionary of Genetic Codes" represents the first significant compilation of short oligonucleotides (called "words") having known or presumed biological meanings.

In the first part of the book the "Gnomic Dictionary", about 800 oligonucleotides are concisely described and corresponding references are provided in an abbreviated form. The entries in this section are derived from the evaluation of about 400 more recent publications (papers up to 1986 are included). While most of the relevant journals have been evaluated, some have been ignored (e.g. "Current Genetics, Plant Molecular Biology, Plasmid").

The following three parts of the book are outlined to assist the readers use of the "Dictionary". A "Context Index" lists all entries in which a given pentanucleotide is present as a subunit. This index is helpful for locating related sequences in those cases where a particular nucleotide sequence can not be found in the "Dictionary". A "Keyword Index" contains a list of oligonucleotides associated with a particular keyword. This index is followed by a "Reference Index" which provides the exact references of those papers cited in the "Gnomic Dictionary". Finally, the book contains several tables as "Appendixes". In these tables, well-defined nucleotide sequences (e.g. promoters, terminators, ribosome binding sites) and frequencies of certain nucleotides or oligonucleotides from different genomes are compiled. Although some of these tables are very useful, this part of the volume is not well-balanced. It is not clear why some sequences are mentioned and others are omitted (e.g. prokaryotic promoters and eukaryotic ribosome binding sites are included; eukaryotic promoters and prokaryotic ribosome binding sites are omitted). In addition, on the last page (Appendix IV: "Codon usage tables"), a reference is given and instead of some well-selected tables, a cartoon with two gnomes which are looking very helpless can be seen. This cartoon reflects the problems the authors seem to have in selecting relevant codon usage tables. Nevertheless, tables providing data about the codon usage of relevant organisms (e.g. *E. coli*) can already be found in certain textbooks and are helpful for analysing nucleotide sequences.

In conclusion, this compilation of nucleotide sequences having biological meanings is of interest for those readers dealing with the analysis and interpretation of nucleotide sequences. The book is especially recommended to researchers handling novel sequences. This reviewer suggests the inclusion of both an "Author" and an "Organism Index" in a second edition. These indexes would be helpful for using the dictionary. In addition, more papers and journals should be evaluated, even though it will never be possible that (because of the enormous speed new sequences are published) a book of this kind can be up-to-date.

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