

## ***Guidebook to the Cytoskeletal and Motor Proteins*** **by Thomas Kreis and Ronald Vale, Editors**

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Cytoskeletal proteins play integral roles in a variety of cellular processes, including establishment and maintenance of cell polarity, cell division and motility, and intracellular transport. They are often a major target of signal transduction systems and the primary mediators of morphogenesis. Within the past decade, the discovery and characterization of cytoskeletal proteins has occurred at an astounding rate. This molecular inventory has been compiled by investigators studying many different biological processes using a wide variety of eukaryotic organisms. As such, researchers may find themselves in need of a quick reference manual for cytoskeletal proteins. The guidebook edited by Thomas Kreis and Ronald Vale is an attempt to fill that need.

The guidebook is organized into seven sections that cover very broad classifications of cytoskeletal and associated proteins. These include actin and associated proteins, intermediate filaments, tubulin and associated proteins, motor proteins, cytoskeletal anchor proteins, and organelle membrane associated structural proteins. The final section, "other proteins," covers cytoskeletal proteins that do not obviously fit into the other categories. Each section begins with a general introduction from 4 to 10 pages in length highlighting the known biological function of proteins in the category as well as several unanswered questions and directions for further research. The introductions are followed by short, succinct descriptions of the individual proteins in each class written by prominent investigators who have been involved in the characterization of these proteins. These entries are one-half to two pages in length and begin with a very brief (two to three sentences) description of the proposed function of the protein. What follows is a section that describes the general characteristics of the protein such as its molecular weight, proposed structure, and subcellular localization. The remaining sections describe assays for activity (if appropriate), procedures for protein purification, characteristics of antibodies that may be available, and references to cloned genes complete with Genbank accession numbers. Most of the articles also include images of the protein *in vitro* or *in situ* and/or schematics of various functional or structural domains within the protein. After the entry is a list of key references to the original literature.

This book has several positive attributes. The introductions, although brief, are interesting, well written, and help to orient the reader with regard to the general functions of the proteins in the category. The scope of the volume is large, covering approximately 125 cytoskeletal and motor proteins. Because of the breadth of coverage, the articles provide only the bare bones information for each protein. Although this format obviously omits some details about the protein, it does provide the most pertinent information in a concise fashion. In addition, the references at the end of each article include both historical and more recently published articles, should the reader require more information.

The guidebook format, however, has its disadvantages. Discussion about the actual biological function is limited to two or three sentences and, as such, is somewhat lacking. Furthermore, because of the unavoidable delay in publishing articles in a book format, the articles are somewhat outdated. Most articles include references only up to 1991, with 1992 references being listed as "in press." To help compensate for this, the editors have created a database that will allow authors represented in this book and in its companion volume, "Guidebook to the Extracellular Matrix and Adhesion Proteins," to update information about these proteins. The database is easy to access on the Internet through the Gopher information server ([itsa.ucsf.edu](http://itsa.ucsf.edu), then **Researcher Tools**, then **Protein Data Base**) and is a good idea in principle. However, the database will be of limited utility if more authors do not contribute updates. When we checked the database, we found that out of the 205 proteins listed in these volumes, only 31 had been updated, along with nine entries that reported no new information since book publication.

Overall, we believe this book is valuable to individuals who want a "quick read" about a cytoskeletal or motor protein. The pertinent information is easy to find and digest, which makes this book a good starting point to learn about a particular protein. However, for a broader, more thorough understanding, there is no substitute for a trip to the library.