The final four chapters are potentially more interesting to cell biologists. The first of this group, a review on effects of cytochalasins on plant and prokaryotic cells, describes effects comparable to those in animal cells on protoplasmic streaming in such cells as Nitella, in which actin is clearly involved, but also rather a patchwork of effects (at very high concentrations) on other aspects of plant or bacterial cell function. These are disappointingly reminiscent of the phenomenological papers in the Tannenbaum volume. Perhaps some evolutionary connections will be made or some useful function stumbled upon, but it all seems hard work to me with few rational themes running through it. This criticism can also be levelled at the next chapter, which reports and reviews observations on the effects of cytochalasin H on a range of multicellular organisms. The final two chapters deal one with the effects of cytochalasins on ion channels and related phenomena and the other review aspects of their effects on cultured mammalian cells and on actin respectively. The former chapter is relatively unconvincing whilst the latter, perhaps the most familiar to most cytochalasin users, deals with the effects on the behaviour of actin in too general and uncritical a way to be very useful.

The book was marked as published in 1986, although I didn't find any references subsequent to 1984. If you are very involved with this group of compounds you might ask your library to buy a copy, otherwise the price and rather idiosyncratic coverage rate makes this book a strictly national lending library option.

Peter Sheterline

Amino Acids in Health and Disease: New Perspectives

UCLA Symposia in Molecular and Cellular Biology, New Series, Vol. 55

Edited by S. Kaufman

Alan R. Liss; New York, 1987

xvi + 619 pages. $98.00 (hardback)

In the last few years, with the discovery that neurotransmitter and hormone action share many common features, there has been a rejuvenation of neurological science. A notable proportion of transmitters and hormones are derived from phenylalanine, tyrosine and tryptophan, and this Symposium (virtually restricting itself to this group of amino acids) provides a multi-disciplinary presentation of their biochemistry, physiology and psychodynamics in the brain.

The Symposium, held in May–June 1986, was organised in six sessions of which three stand out: (i) Amino acid transport, barriers and compartmentation, including interorgan relationships in plasma amino acid availability and the transport of neutral amino acids across membrane barriers; (ii) Neurotransmitter regulation, chiefly catecholamines and 5HT; and (iii) Hydroxylases (aromatic amino acid hydroxylases) – enzymology and gene expression. They amount to half the length of the book and are concluded by a workshop report on the regulation of hydroxylases. In subsequent sessions the discussion included the side-effects of the sweetener aspartame, and the classic inborn error of amino acid metabolism, phenylketonuria (PKU). Among the problems considered here was the production of palatable diets for the management of PKU. The prospects of somatic gene therapy were also reviewed: there is now a cDNA available that is fully competent in producing active phenylalanine hydroxylase (PAH) activity, and the treatment of PAH-deficient patients by effectively transferring the gene to them (by e.g. the use of defective retroviruses) has now been achiev-

ed in cell culture, although in whole animals it is still only rudimentary.

The general biochemist will find that this volume contains some useful and stimulating overviews of enzymological advances and of molecular genetics in this field. It will be clear however that breakthroughs in understanding the complex interrelationships of amino acid metabolism are still some way off.

K.V. Rowsell

Molecular Foundations of Drug–Receptor Interaction

by P.M. Dean

Cambridge University Press; Cambridge, 1987

381 pages. £45.00

Molecular modelling by computer is having an increasingly important impact in many areas of biological science, not least in molecular pharmacology and drug design. Indeed, it is the exceptional pharmaceutical company that does not now have a computerised modelling activity. This useful book has much to offer those who wish to learn about this subject at both advanced undergraduate and postgraduate levels. It will also be an indispensible work of reference to practising molecular modellers, not least because the author offers clear discussion of many current techniques and problems. The author does not claim to have produced a comprehensive treatise on drug-receptor modelling, although he has largely succeeded in covering a considerable number of topics. These include thorough and useful descriptions of molecular geometry and coordinate transformations, concise surveys of the various components commonly attributed to intermolecular force fields, and the major features of macromolecular structure. The last topic is the cornerstone of molecular approaches to drug design. Unfortunately, it is a serious weakness of the book that Dean does not cover it sufficiently thoroughly or indeed at a consistent level. The interested reader will search in vain for useful indications of essential further reading on this topic. The level and extent of coverage of other topics is not always especially even, and one might have wished for greater selectivity. The attempt to survey X-ray crystallography theory and structure analysis methods in nine pages surely does not satisfy either the crystallographer or the non-expert. Both would have been better served by a discussion of the scope and limitations of crystal structure results; it is equally regrettable that there is barely any discussion of the applications of high-field nuclear magnetic resonance results to drug-receptor modelling.

There is, perhaps inevitably, emphasis on Dean's own interests and contributions in the area of drug-DNA interactions as studied by electrostatic potential and allied methods. The expert in this topic will find much of interest here, though others should be warned that the important contributions made by many workers (for example, in studies on DNA-drug conformation), are almost completely ignored.

In spite of these caveats, 'Molecular Foundations of Drug-Receptor Interactions' is on balance a useful addition to library shelves. However, its many inconsistencies in depth and coverage detract from what might have been a standard text for the increasing number of students.

Stephen Neidle

electrostatic interactions hydrophobic interactions hydrogen bonds. The binding interactions between histamine H1 antagonists and the histamine receptor involves which kind(s) of interactions? allergic rhinitis motion sickness sleep induction (can induce sleep, not treat against sleep haha). The main use of H1 receptor antagonists is to treat _ _____, but can also treat __ __ and __ _. scopolamine. Which H1 receptor antagonist is specifically used for motion sickness?Â This set is often saved in the same folder as Molecular Foundations of Drug Action: Receptor Tyrâ€¦ 43 terms. Parish_christopherPLUS. Molecular Foundations of Drug Action: Ligand and Vâ€¦ 31 terms. Parish_christopherPLUS. Molecular Foundations of Drug Action: GPCR Structuâ€¦ Drugs interact with receptors in a reversible manner to produce a change in the state of the receptor, which is then translated into a physiological effect. This molecular interaction with the receptor can be modeled mathematically and obeys the Law of Mass Action. Occupancy theory rests on the concept that the proportion of occupied receptors is related to the effect of the drug (eg. for full agonists and a linear relationship, 100% occupancy = 100% effect). This has been extended into several conceptual frameworks (eg. the Operational Model, the Two State Model, the Ternary Model etc). Theories of drug receptor interactions. by Lee Eun Jin. Drug(Ligand) Receptor interaction. Drug Ligand-binding domain Effector domain. Drug-Receptor Complex k1 k2.Â Molecular level conceptual model of Receptor These models emphasize the fact that many receptors are not just simple macromolecules, which interact with a drug in hand in glove fashion. On the contrary, some receptors are extremely dynamic, existing as a family of low-energy conformers existing in equilibrium with each other. Other receptors have complex multi-unit structures, being composed of more than one protein; facilitatoryand inhibitory interactions exist between these subunits and may alter the drug-receptor interaction.