

# PostScript

## BOOK REVIEWS

### Infectious Causes of Cancer: Targets for Intervention

James J, ed. (\$110.00.) Humana Press, 2000. ISBN 0 896 03772 X.

The most important advance in oncology ever is the understanding that cancers (mostly) have specific causes, and that these causes may be identified, leading (potentially) to control. The causes of some cancers are infectious agents. The proposal that cancers are caused by infectious agents has had a very up and down history: today we can be certain that many cancers, including several of the very common ones, have aetiologies with infectious agents as necessary (but usually not sufficient) factors. Where a cancer has an infectious "cause" we can in principle design control strategies based on ones for infectious disease—we know how to cope with infectious diseases (mostly).

Looking world wide we can now point at the main infectious agents involved in cancer. These are human papillomavirus (HPV), which is recognised by the World Health Organisation as a cause (and probably the primary cause) of cervical carcinoma; hepatitis B and C viruses (HBV and HCV), which certainly contribute to hepatocellular carcinoma; and *Helicobacter pylori*, which most certainly contributes to gastric carcinoma. These four examples probably account for a fifth or more of cancer globally. In the developed world, the proportion is rather less because the hepatitis viruses are rare. In certain areas of the world, other infectious agents are major contributors to cancer causation—for example, in Egypt, *Shistosoma haematobium* and bladder cancer, and in parts of the Far East, Epstein-Barr virus (EBV) and nasopharyngeal carcinoma. Perhaps dozens of other cancers, some wonderfully rare and exotic, are associated with some sort of infection.

This present book deals with the issue of infection and cancer. It is laid out in sections according to the different class of infectious agent, with a chapter giving an overview of the biology (including molecular aspects) of the different agents (such as herpes viruses) followed by individual chapters describing the involvement of these agents with specific cancers. There is also a fascinating introductory chapter dealing with the historical aspects of the topic, reminding us of the often bizarre ideas our ancestors had about the biology of disease.

This is a multiauthored book with the accompanying strengths and faults. The strengths are of course that the chapters are written by experts and are authoritative. The weaknesses are that the chapters are perhaps not as well integrated as they might be. My experience of editing is that it is not easy to get contributors do what you want. It is a tough editor who strikes out parts of a chapter, or worse, asks for more material or a different slant, or worst of all, says that such and such is already covered (better, at least by

implication) in another chapter. The editor, if he were to do this, would end up with no chapters.

Therefore, there is inevitably some degree of overlap, particularly in the description of the biology of infectious agents as relevant to cancer. There are other problems, particularly with the balance of the topics covered.

I feel quite strongly that the coverage should have been weighted towards the cancers that really are quantitatively important, leaving "less important" cancers to a short summary chapter. As I indicate above, perhaps three cancers with infectious aetiology contribute to a fifth of the world burden. These should have been starred for really in depth coverage. But—for example, leiomyoma and leiomyosarcoma get 15 pages and adult T cell leukaemia gets 19 pages, whereas hepatocellular carcinoma weighs in at 17. Surely this isn't quite right.

Likewise, one topic that I think might have been dealt with more effectively (in the space generated by reducing the treatment of the more exotic diseases) is how the different agents discussed manage to evade the immune system and so set up the chronic infection. This surely is the necessary prodrome for cancer—which after all is not an acute disease. Why does the immune system not clear these agents effectively? This is a hard question, often with no answers, but needing consideration.

Again, another topic that deserves more space surely is the issue of intervention (the subtitle of the book). Public health measures could to a large degree reduce the incidence of infection by at least some of these agents—safe sex in the case of HPV—for example. Vaccination is another intervention route—the effective elimination of HBV in Taiwanese children is expected to reduce hugely the incidence of hepatocellular carcinoma. Eradication of the infection is a third route—for example, *H pylori*. What then are the prospects, say, for an HCV vaccine? And what are the practicalities of vaccinating against HBV in the third world?

Perhaps I have sketched out a different book, and it is not fair to criticise an editor for not preparing the book I want. On the positive side, this really is a very comprehensive account of the infectious agents and the cancers they cause. It is instructive to contrast this book with that by Christopher Andrews, entitled "Viruses and Cancer", and published some 30 years ago—not that long. Nearly all of Andrews's book dealt with animal models: the only virus associated with human cancer then was EBV—and without any certainty of whether it had a role in cancer, never mind what that role might be. Times have changed!

A Morris

### Methods in Molecular Medicine: Melanoma Techniques and Protocols

Nickoloff BJ, ed. (\$125.00.) Humana Press, 2001. ISBN 0 896 03684 7

This is number 61 in a series of books on molecular medicine published by Humana

Press. It is very comprehensive in its scope and has 20 chapters written by different authors starting with general aspects of melanoma molecular biology, ranging through tumour suppressor genes, tumour specific antigens, and genetic testing, going on to diagnostic aspects, treatment, and monitoring of residual disease. Each chapter has a standardised layout, each topic covers general principles as well as those more specific to malignant melanoma, and there are step by step details of methods and comprehensive references. Chapters vary in length but are of a uniform high standard and all are clear even to a non-expert. In many cases, the chapters will be of interest to workers in fields other than melanoma because they have some general applicability.

Workers in the field may be well versed in one aspect of this disease and for them this book will put other areas of research into perspective. In conclusion, there is something for everyone here who is interested in the enigmatic world of malignant melanoma.

P Colloby

### Self-assembling Complexes for Gene Delivery

Kabanov AV, Felgner PL, Seymour LW, eds. (£70.00.) Wiley, 1998. ISBN 0471 97269

This publication brings together a collective wealth of knowledge from a number of experts in the field of non-viral gene therapeutics, and addresses the hurdles and most recent progresses in the field. The book is divided into a user friendly series of subsections, beginning with an extensive outline of the principles of self assembly of DNA with cationic agents, such as lipids or polyamino acids, right through to some of the ongoing clinical evaluations of the formulations currently in trials.

Although the reader might become bogged down in the convoluted theories of complexation, and the mathematics governing self assembly outlined in the first part of the book, the chapters are all well referenced, and the discerning reader will be directed towards further literature as necessary. The second part of the book provides an excellent synopsis of natural mechanisms for the delivery of foreign DNA. Endocytosis is comprehensively reviewed, followed by an especially interesting insight by Greber into the differing mechanisms used by a range of animal viruses to deliver their DNA to the nucleus of the eukaryotic cell, and the possible pathways that could be hijacked by gene delivery complexes to achieve the same result.

The ensuing subsections of the book outline recent experimental observations using various different formulations of gene delivery complexes. Extensive insights into the behaviour of lipoplexes, polyplexes, and dendrimers (parts 3 and 4) both in vitro and in vivo are reviewed, with the modality of

action for the different formulations also thoroughly scrutinised. However, little, if any, mention is made of recent advances in the delivery of naked DNA and the use of electroporation and ultrasound in directing DNA delivery.

Part 5 reviews the pharmacokinetics of macromolecules and gene delivery systems. This is a key issue for all gene delivery constructs because it is essential that the agent is retained systemically for a long enough time for it to reach its site of action. This is an area that has seen important advances in recent years yet is only reviewed briefly here. However, the interested reader is again guided to a wealth of further reading that provides additional insights.

Subsection 6 gives an extensive summary of the use of ligands and peptides to promote cell entry of complexes, with particular emphasis on (receptor) binding ligands and agents that promote the release of DNA either by endosome membrane disruption or vector unpackaging. This is followed by a brief subsection outlining some novel construct formulations encompassing semisynthetic vectors (combining viral proteins with non-viral vectors) and systems for sustained release of gene delivery systems.

The book concludes with an appraisal of the non-viral gene delivery vectors in trials, evaluating their use in the treatment of the monogenetic disorder, cystic fibrosis, and moving on to their potential in cancer treatment. Although this section is somewhat out of date (given the ever increasing number of trials in progress), it still provides the reader with an invaluable insight into the progression of non-viral gene delivery vectors from the laboratory into the clinic.

On the whole, this book provides an exceptional insight into its subject area, and offers good value for money. I would certainly recommend this book to those with an interest in this field of study.

A Parker

The topics include: leucocyte filtration of blood cardioplegia, filtration of salvaged blood, modified ultrafiltration (MUF), pre-bypass filtration; neuroprotective effects of leucocyte filtration, surface coating—why and where, strategic leucocyte filtration.

Workshop fee: £100.00.

Abstracts are invited for poster presentations at the workshop.

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## NOTICE

### Therapeutic Filtration Workshop: Therapeutic Filtration and Extracorporeal Circulation

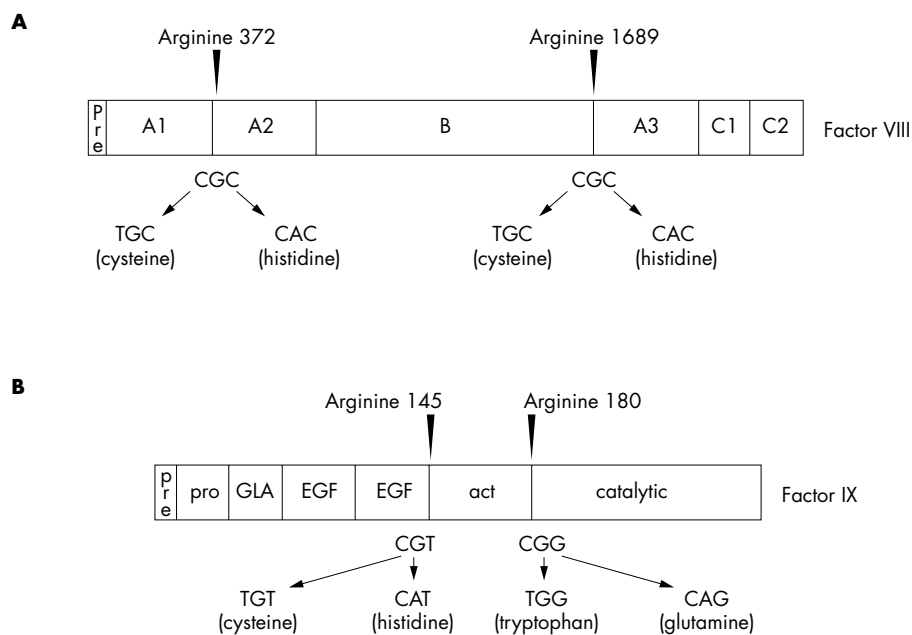
19 July 2002

Wolfson Conference Centre, Hammersmith Hospital, London

## CORRECTION

**Haemophilia A and haemophilia B: molecular insights (corrected version).**  
Bowen DJ. *Mol Pathol* 2001;55:127–144.

Owing to an error in the electronic processing of this paper the wrong diagram was used for fig 11, which should have been as follows. This mistake was entirely the fault of the journal and not the author.



**Figure 11** Mutations as a result of CG transitions at the codons encoding the activation cleavage site arginine residues of (A) factor VIII and (B) factor IX.



**Self-assembling Complexes for Gene Delivery  
: Kabanov AV, Felgner PL, Seymour LW, eds.  
(£70.00.) Wiley, 1998. ISBN 0471 97269**

A Parker

*Mol Path* 2002 55: 207-208  
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