

What the motivations are, are difficult to fathom, but the cause of pure inquiry is something that we can neither stem nor seriously question. The implications are serious, and not just in the legal dimension. These are complex issues of ethics.

How tenable is Baldi's basic contention, that we are now in a position to tamper in any significant way with a process as powerful as evolution? I feel that the case is not made out that strongly after all. It is easy to conjure up scenarios, each more horrific (from today's viewpoint) than the other, but whether these will come to pass is by no means clear. Maybe the problem is that this book is written for a layperson, but the arguments are not clearly presented, and too many threads lie scattered. Baldi has tried to convey some idea of the unleashed potential of many of the current techniques of modern biology and information science, but in the end, there is no apposite instance to convince the reader that what the author fears will happen, could really happen. At least for now.

The gift of being able to look into the future is something that is given to few, and the example of Cassandra is probably appropriate to recall. However, it is the undeniable value of Baldi's book that it raises today several of the questions that will eventually affect our descendants. Some of these will be our children and our grandchildren, but we must admit that there is a very real possibility that some of these will be our clones.

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Analytical Biotechnology. Thomas G. M. Schalkhammer (ed.). Birkhauser Verlag, P.O. Box 133, CH 4010, Basel, Switzerland. 2002. 331 pp. Price not stated.

The book entitled *Analytical Biotechnology* edited by T. G. M. Schalkhammer from The Netherlands is a part of a series dealing with tools of Bioscience and Medicine encompassing a large area from microinjection to DNA fingerprinting, separation techniques, non-aqueous enzy-

mology, evolution, toxins, etc. Thus, this edited volume is well anticipated which mainly covers the area of immobilization techniques, biochips, and certain detection methods at the nanolevel. This book reminded me of a reputed journal *Analytical Biochemistry*, and I am sure another journal with the same name as this book will appear soon if it does not already exist!

One of the most difficult jobs of a series with collected articles is that not all the chapters are written with equal clarity or are of equal importance. The editor has therefore very little scope to do anything. Thus, this book contains several chapters which are very well written and timely and at the same time there are others which do not add anything new. However, it is also interesting to note that out of nine chapters, five are written or co-authored by the editor himself.

Immobilization technique can be traced as far back as chromatographic separation when phase separation was ingeniously used to purify a component from a mixture of many. Activation of sepharose with cyanogen bromide and then its modification with the desired protein was routine protocol for many laboratories from the middle of the last century until the bulk of such material became commercially available. The next milestone obviously was Ni-affinity matrix and histidine-engineered proteins which created a revolution in protein purification. If the gene is known, amenable to cloning and expression, then all one needs to do is to tag the sequence with multiple histidine codes which upon expression would bind Ni, thus remain immobile till they could be eluted out either by change of pH or by a stronger ligand-like imidazole.

However, with the beginning of microarray techniques, which are known as biochips, the challenge became even more difficult as new chemistry was necessary to attach specific biomolecules on a desired surface within an extremely small area in an order which should be predetermined by the experimenter. Several such methods started appearing in literature and several new journals came about like *Bioconjugate Chemistry* which are dedicated to these methods. The new chemical science was important but the authors also put a lot of emphasis on the protocols which should be reproducible in different laboratories. This series to which the current book also belongs deals mainly with several such methods. I presume here that each protocol des-

cribed is well tested and has gone through various hands before publishing; a practice usually followed in a series like *Methods in Enzymology* or *Methods in Cell Biology*.

In the present book, I find the chapter on *'Immobilized Biomolecules in Bioanalysis'* very well written and extremely useful. It mainly deals with different coupling techniques between an immobile surface and a reactant with detailed protocol at each step (which is, however, true for each and every chapter as well).

I earlier mentioned the difficulties authors face in writing a method book from the point of view of both, its timeliness and reproducibility. In the present case, the details are very well documented, but in certain chapters the theoretical background of a measurement is not covered very well. There are fifteen different protocols on 'Biosensor' including surface plasmon resonance. The area is noteworthy for medical doctors although general readers may find it a little esoteric in nature. Looking at the explosion of literature, the authors here have tried to include 'preparation of 40 nm gold nanoclusters' which is very well written and I am sure will be useful. However, there could be other easier methods to reduce Au (III) to Au (0).

I must add here that any method on generation of 'Biochips', or description of atomic force microscopy, etc. are handicapped to start with, as one can find several detailed protocols from the website. In this respect, this book only serves the purpose of compiling several methods within one cover. However, certain troubleshooting areas and a few comparisons, like the one on DNA chip and protein chip are very well presented and can be used for class-room teaching. The authors did not even fail to include a chapter on media composition like any laboratory manual. But one must emphasize here that this is *not* a manual or method book for undergraduate teaching. Overall, this is a method book, a detailed one for some modern techniques and can serve as a good reference for practising scientists. The book published by Birkhauser containing 330 pages is however a little overpriced for individuals.

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